5276 85688

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Date 1/30/03 Serial # 09/808,957 Priority Application Date 3/17/00

Your Name M. Lewis Examiner # _____

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01-30-03 P05:48 IN

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What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Claims 22-49

Problem: See Page 1 - 2nd Paragraph

" " 2 1st " "

" " 3 " "

Solution: See structure illustrated in the claims

Staff Use Only	Type of Search	Vendors
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FILE 'REGISTRY'
L1 47447 SEA ABB=ON PLU=ON PI/PCT
L2 1 SEA ABB=ON PLU=ON ALUMINIUM/CN
L3 1 SEA ABB=ON PLU=ON GERMANIUM/CN

FILE 'HCAPLUS, WPIX, JAPIO'
L4 3 S JP2000-075755/AP,PRN

FILE 'HCAPLUS'
L5 84062 SEA ABB=ON PLU=ON TRANSISTOR
L6 218464 S ELECTROLUMINESCENCE OR LED OR LASER(W)DIODE OR EL(W)DISPLAY
L7 38029 SEA ABB=ON PLU=ON LCD OR LC(W)DISPLAY? OR LIQUID(W)CRYSTAL(W)
DISPLAY?
L8 4307 SEA ABB=ON PLU=ON MOISTURE(W)PROOF OR AIRTIGHT OR WATERTIGHT

L9 2243 SEA ABB=ON PLU=ON POLYETHER(W)SULFONE OR POLYETHERSULFONE
L10 22021 SEA ABB=ON PLU=ON POLYETHYLENE(W)TEREPHTHALATE
L11 14 SEA ABB=ON PLU=ON ARTON(1A)RESIN
L12 59473 SEA ABB=ON PLU=ON POLYIMIDE OR L1
L13 49 SEA ABB=ON PLU=ON TEFLON(W)RESIN
L14 1235965 SEA ABB=ON PLU=ON ALUMINIUM OR ALUMINUM OR AL OR L2
L15 146282 SEA ABB=ON PLU=ON GERMANIUM OR GE OR L3
L16 2395059 SEA ABB=ON PLU=ON METAL#### OR ALLOY? OR AMALGAM? OR INGOT?
OR BULLION?
L17 386 SEA ABB=ON PLU=ON PIXEL(W)ARRAY
L18 43030 SEA ABB=ON PLU=ON GLASS(A)(SUBSTRAT? OR SURFACE? OR BASE#
OR SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR
PANE?)
L19 115098 SEA ABB=ON PLU=ON (ADHESI? OR ADHERE? OR STICK? OR CLING? OR
BOND? OR GLUE? OR PASTE? OR HOLD?)(2A)(LAYER? OR FILM? OR
COAT?)
L20 25954 SEA ABB=ON PLU=ON (GLASS? OR VITR? OR HYAL? OR CULLET? OR
(NON(W)CRYST? OR NONCRYST? OR AMORPH?)(2A)SOLID?)(A)(LAYER? OR
COAT? OR FILM?)

FILE 'REGISTRY'
L21 0 SEA ABB=ON PLU=ON SILICON/SI
L22 1 SEA ABB=ON PLU=ON SILICON/CN

FILE 'HCAPLUS'
L23 862791 SEA ABB=ON PLU=ON SILICON OR SI OR POLYSILICON OR L22
L24 43030 SEA ABB=ON PLU=ON GLASS(A)(SUBSTRAT? OR SURFACE? OR BASE# OR
SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR
PANE?)
L25 3449 SEA ABB=ON PLU=ON ((L5 OR L6 OR L7)) AND L24
L26 643 SEA ABB=ON PLU=ON L25 AND L14
L27 0 SEA ABB=ON PLU=ON L26 AND L8
L28 4 SEA ABB=ON PLU=ON L25 AND L8
L29 643 SEA ABB=ON PLU=ON L26 AND L24
L30 1031 SEA ABB=ON PLU=ON L5 AND L24
L31 183 SEA ABB=ON PLU=ON L30 AND L14
L32 0 SEA ABB=ON PLU=ON L31 AND L9
L33 0 SEA ABB=ON PLU=ON L31 AND L10
L34 0 SEA ABB=ON PLU=ON L31 AND L11
L35 9 SEA ABB=ON PLU=ON L31 AND L12
L36 0 SEA ABB=ON PLU=ON L31 AND L13
L37 183 SEA ABB=ON PLU=ON L31 AND L14
L38 4 SEA ABB=ON PLU=ON L31 AND L15
L39 5 SEA ABB=ON PLU=ON L31 AND PLASTIC
L40 0 SEA ABB=ON PLU=ON L31 AND L19
E RESINS/CT
E E3+ALL/CT
E TEFLON RESIN/CT
E TEFLON RESINS/CT
L41 55 SEA ABB=ON PLU=ON L7 AND L17
L42 8 SEA ABB=ON PLU=ON L41 AND L24
L43 5 SEA ABB=ON PLU=ON L41 AND L14
L44 0 SEA ABB=ON PLU=ON L41 AND L8
L45 1972 SEA ABB=ON PLU=ON L7 AND L24
L46 192 SEA ABB=ON PLU=ON L45 AND L14
L47 192 SEA ABB=ON PLU=ON L46 AND ((L8 OR L9 OR L10 OR L11 OR L12 OR
L13 OR L14 OR L15 OR L16))
L48 102 SEA ABB=ON PLU=ON L46 AND ((L8 OR L9 OR L10 OR L11 OR L12 OR
L13) OR (L15 OR L16))
L49 0 SEA ABB=ON PLU=ON L46 AND L8
L50 0 SEA ABB=ON PLU=ON L46 AND L9

L51 1 SEA ABB=ON PLU=ON L46 AND L10
L52 0 SEA ABB=ON PLU=ON L46 AND L11
L53 9 SEA ABB=ON PLU=ON L46 AND L12
L54 0 SEA ABB=ON PLU=ON L46 AND L13
L55 10 SEA ABB=ON PLU=ON L46 AND L15
L56 95 SEA ABB=ON PLU=ON L46 AND L16
L57 20889 SEA ABB=ON PLU=ON L6 AND L14
L58 22808 SEA ABB=ON PLU=ON L6 AND ((L9 OR L10 OR L11 OR L12 OR L13 OR
L14 OR L15))
L59 3 SEA ABB=ON PLU=ON L58 AND L8
L60 359 SEA ABB=ON PLU=ON L58 AND L24
L61 7 SEA ABB=ON PLU=ON L60 AND L19
L62 54 SEA ABB=ON PLU=ON L60 AND L23
L63 29329 SEA ABB=ON PLU=ON L6 AND ((L9 OR L10 OR L11 OR L12 OR L13 OR
L14 OR L15) OR L23)
L64 418 SEA ABB=ON PLU=ON L63 AND L18
L65 14 SEA ABB=ON PLU=ON L63 AND L17
L66 10 SEA ABB=ON PLU=ON L64 AND L19
L67 64 SEA ABB=ON PLU=ON (L35 OR L66 OR L65 OR L61 OR L59 OR L55 OR
L53 OR L43 OR L42 OR L39 OR L38 OR L35) NOT (L28)
L68 89 SEA ABB=ON PLU=ON (OKANO H OR OKANO, H OR OKANO, HIROYUKI OR
OKANO HIROYUKI)/AU
L69 0 SEA ABB=ON PLU=ON L68 AND ((L5 OR L6 OR

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Set	Items	Description
S1	179826	TRANSISTOR OR TFT
S2	544042	ELECTROLUMINESCENCE OR EL OR LED OR LASER(W)DIODE OR EL(W)-DISPLAY
S3	37716	LCD OR LC()DISPLAY? OR LIQUID()CRYSTAL()DISPLAY?
S4	54793	CC=(B4150D OR B7260) OR CT=(LIQUID()CRYSTAL()DISPLAYS) OR -LCD OR LC()DISPLAY? OR LIQUID()CRYSTAL()DISPLAY?
S5	54793	S3 OR S4
S6	5545	MOISTURE(W)PROOF OR AIRTIGHT OR WATERTIGHT
S7	2799	POLYETHER(W)SULFONE OR POLYETHERSULFONE
S8	16	POLYETHYLENE(W)TEREPHTHALATE(W)RESIN
S9	12	ARTON(1N)RESIN
S10	245209	RESIN
S11	338125	RESIN? ?
S12	52631	POLYIMIDE? ?
S13	29	TEFLON(W)RESIN? ?
S14	1618077	SILICON OR SI
S15	255847	GERMANIUM OR GE
S16	4884533	METAL???? OR ALLOY? OR AMALGAM? OR INGOT? OR BULLION?
S17	1375	PIXEL(W)ARRAY
S18	48978	GLASS(N)(SUBSTRAT? OR SURFACE? OR BASE? ? OR SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR PANE?)
S19	64437	(ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR GLUE? OR PASTE? OR HOLD?)(2N)(LAYER? OR FILM? OR COAT?)
S20	19360	(GLASS? OR VITR? OR HYAL? OR CULLET? OR (NON(W)CRYST? OR N-ONCRYST? OR AMORPH?)(2N)SOLID?)(N)(LAYER? OR COAT? OR FILM?)
S21	766091	S1:S4
S22	94	S21 AND S6
S23	78	RD (unique items)
S24	9	S23 AND S11
S25	3	S23 AND (ALUMINIUM OR ALUMINUM OR AL)
S26	1	S23 AND S14
S27	0	S23 AND S15
S28	0	S23 AND S18
S29	0	S23 AND S19
S30	0	S23 AND S20
S31	0	S23 AND S17
S32	0	S21 AND S8
S33	3	S21 AND S9
S34	61	S21 AND S7
S35	9	S34 AND (ALUMINIUM OR ALUMINUM OR AL)
S36	3	S34 AND S14
S37	2	S34 AND S15
S38	0	S34 AND S17
S39	2	S34 AND (S18:S20)
S40	27	(S24:S33) OR (S35:S39)
S41	23	RD (unique items)
S42	48	S34 NOT ((S24:S33) OR (S35:S39))
S43	39	RD (unique items)

FILE 'WPIX, JAPIO'

L1 323548 S TRANSISTOR OR TFT

L2 27838 S ELECTROLUMINESCENCE OR EL OR LED OR LASER(W) DIODE OR EL(W) DISPLAY

L3 156180 S (U14-K01 OR W03-A08B OR W04-M01D3A OR T04-H03C2)/MC OR LCD OR LC(W) DISPLAY? OR LIQUID(W) CRYSTAL(W) DISPLAY?

L4 46090 S MOISTURE(W) PROOF OR AIRTIGHT OR WATERTIGHT

L5 1816 S POLYETHER(W) SULFONE OR POLYETHERSULFONE

L6 2160 S POLYETHYLENE(W) TEREPHTHALATE(W) RESIN

L7 0 S ARTON(1N) RESIN

L8 1137692 S RESIN

L9 45955 S POLYIMIDE

L10 264 S TEFLON(W) RESIN

L11 508991 S SILICON OR SI

L12 31443 S GERMANIUM OR GE

L13 1876153 S METAL#### OR ALLOY? OR AMALGAM? OR INGOT? OR BULLION?

L14 1335 S PIXEL(W) ARRAY

L15 66879 S GLASS(N)(SUBSTRAT? OR SURFACE? OR BASE# OR SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR PANE?)

L16 253941 S (ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR GLUE? OR PASTE? OR HOLD?)(2N)(LAYER? OR FILM? OR COAT?)

L17 24111 S (GLASS? OR VITR? OR HYAL? OR CULLET? OR (NON(W) CRYST? OR NONCRYST? OR AMORPH?)(2A) SOLID?)(N)(LAYER? OR COAT? OR FILM?)

L18 488457 S ((L1 OR L2 OR L3))

L19 608 S L18 AND L4

L20 24 S L19 AND (ALUMINUM OR ALUMINIUM OR AL)

L21 20 S L19 AND PLASTIC

L22 6 S L19 AND (L5 OR L6 OR L9)

L23 75 S L19 AND L8

L24 8 S L23 AND (L11 OR L12)

L25 4 S L23 AND L15

L26 6 S L23 AND L16

L27 1 S L23 AND L17

L28 124 S L18 AND L5

L29 18 S L18 AND L6

L30 3070 S L18 AND L9

L31	1 S	L18 AND L10
L32	7 S	L28 AND L15
L33	12 S	L28 AND L16
L34	4 S	L28 AND L17
L35	0 S	L30 AND L6
L36	1 S	L30 AND L10
L37	499 S	L30 AND L15
L38	27 S	L37 AND L16
L39	0 S	L37 AND L14
L40	10 S	L37 AND L17
L41	0 S	(L28 OR L30) AND L14 AND L13
L42	91 S	L20 OR L22 OR ((L24 OR L25 OR L26 OR L27)) OR L29 OR ((L31 OR L32 OR L33 OR L34 OR L35 OR L36)) OR L40
L43	46 S	(L21 OR L38) NOT (L20 OR L22 OR ((L24 OR L25 OR L26 OR L27)) OR L29 OR ((L31 OR L32 OR L33 OR L34 OR L35 OR L36)) OR L40)

thin film 2. In this embodiment, a moisture proof buffer film 30 is formed previously between the product substrate 1 and the thin film transistor. The buffer film 30 comprises a silicon oxide film or a silicon nitride film formed by a CVD or sputtering method, which stops water passing through the product substrate 1 and suppresses impurities from intruding into the substrate. In the case of using a plastic material for the product substrate 1, it is sometimes preferred to form a buffer film particularly as a moisture proof countermeasure. --

IN THE CLAIMS

Please cancel claims 1-21 without prejudice or disclaimer of its underlying subject matter.

Please add the following new claims.

22. (new) A thin film semiconductor device comprising:

a product substrate and a thin film device,

wherein a manufacturing substrate is of an inorganic material,

wherein said product substrate is one of an organic material and a metal,

wherein said product substrate has a first side and a second side opposed to said first side,

wherein said manufacturing substrate is adjacent said first side, said manufacturing substrate being closer to said first side than to said second side,

wherein said thin film device is adjacent said second side, said thin film device being closer to said second side than to said first side,

wherein said product substrate is between said thin film device and said manufacturing substrate,

wherein said manufacturing substrate is removed to expose said first side, thereby leaving said product substrate and said thin film device.

23. (new) A thin film semiconductor device as claimed in claim 22, wherein said manufacturing substrate is a glass substrate.

24. (new) A thin film semiconductor device as claimed in claim 22, wherein said thin film device is a thin film transistor.

25. (new) A thin film semiconductor device as claimed in claim 22, wherein said metal is aluminum.

26. (new) A thin film semiconductor device as claimed in claim 22, wherein said organic material is a plastic.

can be ignored actually. Next, vapor-depositing **Al** improve the **airtight** contact between **Al** and Si, an alloying heat treatment is not necessary, and no gate-drain short occurs which is caused by a punch-through of **Al**.

L42 ANSWER 91 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1979-068656 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN TAKAHASHI JUN
PA CASIO COMPUT CO LTD
PI JP 54068656 A 19790601 Showa
AI JP 1977-135461 (JP52135461 Showa) 19771111
PRAI JP 1977-135461 19771111
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1979
AB PURPOSE: To improve the **adhesion** between insulation **film** and substrate and improve the transparency and direct current resistance of the display device by providing an insulation film composed of **polyether sulfone** on the electrode forming surface of substrates thereby forming the **liquid crystal display** device.
CONSTITUTION: A methanol sulution containing 1 wt% of epoxy base silane is coated over the entire electrode forming surface of a substrate 1 which comprises forming electrodes 2 of specified patterns with tin oxide, indium oxide, etc. on its surface and is then dried for about 10 minutes at about 100°C, whereby an underlying film 3 is formed. Next, the solution comprising dissolving 5 wt% of **polyether sulfone** to a mixed solvent of about 80 parts of cyclohexane and about 20 parts of dimethylformamide and further adding and mixing 25 wt% of methyl ethyl ketone is coated and is dried for about 15 minutes at about 160°C then for 15 minutes at about 400°C to form an insulation film 4, after which orientation treatment is applied after rubbing the surface through the use of a cotton cloth or the like. Next, the electrode substrates A, B having been formed in the abovementioned manner are bonded and fixed by way of a spacer 5 and liquid crystal 6 is injected and sealed therebetween, whereby the liquid crystal cell is provided.

the substrate in the chamber. A case (13) arranged in the process space of the chamber covers an opening (12a) formed in its wall and defines an inner space airtightly isolated from the process space. The case has a main plate (31) made of light transmissive material facing the supported substrate, the plate having a flat outer surface with a larger contour than that of the substrate, and a cover (34) closing its inner space and the chamber. A resistance heater (14) is provided in the inner space, adjacent the main plate, and is connected by leads (15) to an external electric power supply (25). A temp. sensor (16) is also provided in the inner space for measuring the temp. of the resistance heater. Means are also provided for supplying (43) an inactive gas to the inner space and for exhausting (44) it.

USE - Appts. is for processing semiconductor wafers or **LCD** substrates by heating them in a process gas atmos. to achieve chemical vapour deposition.

ADVANTAGE - Appts. ensures the formation of a uniform thin film over the entire surface of a wafer. Because the resistance heater and thermocouple are housed in an enclosure which is separate from the process chamber, they are not exposed to corrosive gases which can change their operating parameters and cause rapid failure.

Dwg.1/5

L42 ANSWER 31 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1994-206173 [25] WPIX
DNN N1994-162433 DNC C1994-094262
TI Prevention of cracks occurring on **glass substrate** - by applying adhesive having **moisture-proof** effect, e.g. high speed setting epoxy , gp adhesive, along parting portions and curing.
DC A81 G03 L01 L03 U14
PA (SANS-N) SANSEI DIAMOND KOGYO KK
CYC 1
PI JP 06144875 A 19940524 (199425)* 3p
ADT JP 06144875 A JP 1992-300828 19921111
PRAI JP 1992-300828 19921111
AB JP 06144875 A UPAB: 19940810
Adhesive having **moisture-proof** effect is applied along parting portions and cured. The adhesive having **moisture-proof** and proper pliability used is such as in ray radiation setting **resin**, high speed setting epoxy gp. adhesive, quick drying adhesive, etc.

USE/ADVANTAGE - The process is used for parted portion of **liq . crystal display** substrate. The process avoids generation of cracks at parted portion of the substrate due to residual stress.

Dwg.1/8

L42 ANSWER 32 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1993-380129 [48] WPIX
DNN N1993-293503 DNC C1993-168664
TI Phase difference plate, for **LC display** devices - contg. copolymer resin consisting of mixt. of thermoplastic resins of different glass transition points.
DC A89 L03 P81 U14
PA (SUMO) SUMITOMO CHEM CO LTD
CYC 1
PI JP 05281418 A 19931029 (199348)* 4p
ADT JP 05281418 A JP 1992-81992 19920403
PRAI JP 1992-81992 19920403
AB JP 05281418 A UPAB: 19940120
A phase difference plate contains a thermoplastic copolymer resin as the resin component which is mixt. of (A) a thermoplastic resin having a glass

polyolefin thermosetting adhesive. (IV) has excellent moisture resistance, thus electroluminescent panel is sealed in a **moisture -proof** fashion.

L42 ANSWER 54 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 2000-113990 JAPIO
TI ORGANIC EL ELEMENT AND ORGANIC **EL DISPLAY** DEVICE
IN EBISAWA AKIRA; ONIZUKA OSAMU; NAKATANI KENJI; ARAI MICHIO; ENDO HIROYUKI; KAWASHIMA MASAYUKI; HAYAKAWA TOSHIO
PA TDK CORP
PI JP 2000113990 A 20000421 Heisei
AI JP 1998-300367 (JP10300367 Heisei) 19981007
PRAI JP 1998-300367 19981007
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000
AB PROBLEM TO BE SOLVED: To provide a long-life organic EL element and an organic **EL display** device capable of being easily manufactured, excluding the effect of moisture to the utmost, reducing deterioration by aging, particularly the expansion of a nonluminescence area and the change of luminance, and capable of maintaining initial performance for a long period.
SOLUTION: This organic EL element is provided with a hole injection electrode, an electron injection electrode and an organic layer including one or more kinds of luminescence layers between these electrodes, and the electron injection electrode contains one or more kinds of an alkaline metal hydride and an alkaline earth metal hydride. The organic EL element is preferably stored in an **airtight** case, and one or more kinds of calcium hydride, strontium hydride, barium hydride and **aluminum** hydride lithium are arranged as a desiccant in the **airtight** case in no contact with the organic EL element.
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L42 ANSWER 55 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 2000-010089 JAPIO
TI INTERLAYER INSULATING FILM FOR **TFT LIQUID CRYSTAL DISPLAY**
IN EGUCHI TOSHIMASA
PA SUMITOMO BAKELITE CO LTD
PI JP 2000010089 A 20000114 Heisei
AI JP 1998-178407 (JP10178407 Heisei) 19980625
PRAI JP 1998-178407 19980625
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000
AB PROBLEM TO BE SOLVED: To make it possible to efficiently produce a **liquid crystal display** element having excellent display characteristics by using an interlayer insulating film for a **TFT liquid crystal display** formed by **sticking** a polymer **film** specified in light transmittance at a specific wavelength and specific dielectric constant on a **TFT** substrate.
SOLUTION: This interlayer insulating film 3 for the **TFT liquid crystal display** is formed by **sticking** the polymer **film** onto the **TFT** substrate 4. The thickness of the polymer film is 1 to 4 μm and the light transmissivity at the wavelength of 400 to 700 nm is required to be >=90%, more preferably >=95% in order to avoid the decrease of the transmissivity and coloration. The specific dielectric constant thereof is required to be <=3.5, more preferably <=3.0 so as to avoid the generation of a large capacitor between transparent electrodes and wiring. While films of polycarbonate, **polyether sulfone**, poly(dicyclopentadiene), polyimide, etc., are preferable as the polymer film, these films are not always restricted.
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02/03/2003

Set	Items	Description
S1	179826	TRANSISTOR OR TFT
S2	544042	ELECTROLUMINESCENCE OR EL OR LED OR LASER(W)DIODE OR EL(W)-DISPLAY
S3	37716	LCD OR LC()DISPLAY? OR LIQUID()CRYSTAL()DISPLAY?
S4	54793	CC=(B4150D OR B7260) OR CT=(LIQUID()CRYSTAL()DISPLAYS) OR -LCD OR LC()DISPLAY? OR LIQUID()CRYSTAL()DISPLAY?
S5	54793	S3 OR S4
S6	5545	MOISTURE(W)PROOF OR AIRTIGHT OR WATERTIGHT
S7	2799	POLYETHER(W)SULFONE OR POLYETHERSULFONE
S8	16	POLYETHYLENE(W)TEREPHTHALATE(W)RESIN
S9	12	ARTON(1N)RESIN
S10	245209	RESIN
S11	338125	RESIN? ?
S12	52631	POLYIMIDE? ?
S13	29	TEFLON(W)RESIN? ?
S14	1618077	SILICON OR SI
S15	255847	GERMANIUM OR GE
S16	4884533	METAL???? OR ALLOY? OR AMALGAM? OR INGOT? OR BULLION?
S17	1375	PIXEL(W)ARRAY
S18	48978	GLASS(N)(SUBSTRAT? OR SURFACE? OR BASE? ? OR SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR PANE?)
S19	64437	(ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR GLUE? OR PASTE? OR HOLD?)(2N)(LAYER? OR FILM? OR COAT?)
S20	19360	(GLASS? OR VITR? OR HYAL? OR CULLET? OR (NON(W)CRYST? OR N-ONCRYST? OR AMORPH?)(2N)SOLID?)(N)(LAYER? OR COAT? OR FILM?)
S21	766091	S1:S4
S22	94	S21 AND S6
S23	78	RD (unique items)
S24	9	S23 AND S11
S25	3	S23 AND (ALUMINIUM OR ALUMINUM OR AL)
S26	1	S23 AND S14
S27	0	S23 AND S15
S28	0	S23 AND S18
S29	0	S23 AND S19
S30	0	S23 AND S20
S31	0	S23 AND S17
S32	0	S21 AND S8
S33	3	S21 AND S9
S34	61	S21 AND S7
S35	9	S34 AND (ALUMINIUM OR ALUMINUM OR AL)
S36	3	S34 AND S14
S37	2	S34 AND S15
S38	0	S34 AND S17
S39	2	S34 AND (S18:S20)
S40	27	(S24:S33) OR (S35:S39)
S41	23	RD (unique items)
S42	48	S34 NOT ((S24:S33) OR (S35:S39))
S43	39	RD (unique items)

41/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

7127397 INSPEC Abstract Number: A2002-03-8115C-006, B2002-01-0520B-018
Title: Deposition of indium-tin-oxide films on polymer substrates for application in plastic-based flat panel displays
Author(s): Sung Kyu Park; Jeong In Han; Won Keun Kim; Min Gi Kwak
Author Affiliation: Korea Electron. Technol. Inst., Pyungtaek, South Korea
Journal: Thin Solid Films vol.397, no.1-2 p.49-55
Publisher: Elsevier,
Publication Date: 1 Oct. 2001 Country of Publication: Switzerland
CODEN: THSFAP ISSN: 0040-6090
SICI: 0040-6090(20011001)397:1/2L.49:DIOF;1-A
Material Identity Number: T070-2001-025
U.S. Copyright Clearance Center Code: 0040-6090/01/$20.00
Language: English
Abstract: Indium-tin-oxide (ITO) films (1000+or-100 A) were deposited on glass and polymer (**polyethersulfone**) substrates by RF-magnetron sputtering for plastic-based flat-panel displays. A novel device and a stepped heating process were used both to eliminate the tensile force and to diminish the thermal expansion of the polymer substrates. Therefore, we succeeded in sputtering ITO films without any cracking or shrink-age of the polymer substrates. The oxygen partial pressure and post-deposition annealing conditions were varied to observe the dependence of the optical, electrical and etching properties of ITO films on the process parameters. The substrate material was **polyethersulfone** with a gas barrier layer. Moreover, in order to investigate the influences of the process parameters, X-ray diffractometer observations and measurement of transmission, sheet resistance and residual resistance after etching process were performed. We found that oxygen content in the polymer matrix resulted from the gas absorption of polymer substrates cause different dependence of polymer substrates on oxygen partial pressure compared with **glass substrates** . Consequently, we could obtain high conductive (20-25 Omega Square Operator /sup -1/) and transparent (above 80%) ITO films deposited on polymer substrates using the condition of 0.2% oxygen partial pressure and vacuum annealing at the temperature of 180 degrees C.
Subfile: A B

41/3,AB/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

5571106 INSPEC Abstract Number: B9706-4220-006
Title: Development of organic electroluminescent materials
Author(s): Uemura, T.; Kimura, H.; Okuda, N.; Okuda, Y.; Ueba, Y.; Shirakawa, T.; Osaka, H.
Author Affiliation: Basic High Technol. Labs., Japan
Journal: Sumitomo Electric Technical Review no.43 p.89-95
Publisher: Sumitomo Electric Industries,
Publication Date: Jan. 1997 Country of Publication: Japan
CODEN: SETRAY ISSN: 0376-1207
SICI: 0376-1207(199701)43L.89:DOEM;1-B
Material Identity Number: S265-97001
Language: English
Abstract: We investigated the thermal stability of hole transport films, in which an aromatic diamine derivative (TPD) is dispersed in four types of

polymer, and the driving life-time of the organic electroluminescent (**EL**) devices using these hole transport films and **aluminum** quinolinate (Alqs) emitter. It was found that the thermal stability of the film improves with polymers which have a higher glass transition temperature and that the device with a more stable hole transport film has the longer driving life-time. We further studied the stability of the hole transport film dispersed TPD in **polyethersulfone** (TPD+PES) with a glass transition temperature of 225 degrees C and on the driving life-time of the device. A device with an electron transport layer of CNTAZ 2, an emitting layer of Alqs and a hole transport layer of TPD+PES was fabricated and the properties of the device were investigated. It was found that CNTAZ 2 is a new electron transport material with outstanding electron injection and durability equal or superior to Alqs.
Subfile: B

41/3,AB/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

01610454 INSPEC Abstract Number: B81001789
Title: Evaluation of high humidity and temperature environment of epoxy **resin** for light emitting diode encapsulation
Author(s): Watanabe, E.; Ebata, H.; Kanou, K.; Ogawa, I.
Author Affiliation: Electrotech. Lab., Ibaraki, Japan
Journal: Bulletin of the Electrotechnical Laboratory vol.43, no.11-12 p.774-7
Publication Date: 1979 Country of Publication: Japan
CODEN: DESIA7 ISSN: 0366-9092
Language: Japanese
Abstract: A number of film specimens of epoxy **resin** for light emitting diode (**LED**) encapsulation were exposed to some kinds of environment with different temperature and high relative humidity. Moisture absorption isotherms, moisture permeabilities, dielectric characteristics at high frequencies (10 MHz and 50 MHz), infrared absorption spectra and thermally stimulated currents were measured for each specimen before and after the exposure to each kind of the environment. The **moisture-proof** and heat-resistant characteristics of the epoxy **resin** are discussed and evaluated.
Subfile: B

41/3,AB/4 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05457273
E.I. No: EIP00014971844
Title: Ground movements due to the construction of cut-and-cover structures and slurry shield tunnel of the Cairo Metro
Author: Hamza, M.; Ata, A.; Roussin, A.
Corporate Source: Hamza Associates, Giza, Egypt
Source: Tunnelling and Underground Space Technology v 14 n 3 Jul-Sep 1999. p 281-289
Publication Year: 1999
CODEN: TUSTEQ ISSN: 0886-7798
Language: English
Abstract: This paper presents an evaluation of the settlement prediction techniques used to estimate the surface settlements associated with the construction of the Greater Cairo Metro Line 2. The construction of the

Cairo Metro involved the construction of cut-and-cover underground stations and bored tunneling. A typical underground station was executed using top-down construction technique. The twenty two meters excavation was carried inside a **watertight** box with 50-m-deep diaphragm walls to form the sides and a 7-m thick grouted plug at the bottom. Tunneling was performed using a slurry shield tunnel boring machine, TBM, having an internal diameter of 9.48 m. This analysis is the first step in view of enhancing the procedures of settlement prediction and appraising potential damages to overlying structures and utilities for the future construction of the twin road tunnels in the historical urban environment of **Al** Azhar area and Khan **El** Khalily market in Cairo. (Author abstract) 18 Refs.

41/3,AB/5 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04817881
E.I. No: EIP97093820137
Title: Organic electroluminescent device with molecularly doped polymer hole transport layer
Author: Uemura, T.; Okuda, N.; Kimura, H.; Okuda, Y.; Ueba, Y.; Shirakawa, T.
Corporate Source: Sumitomo Electric Industries, Ltd, Osaka, Jpn
Source: Polymers for Advanced Technologies v 8 n 7 Jul 1997. p 437-442
Publication Year: 1997
CODEN: PADTE5 ISSN: 1042-7147
Language: English
Abstract: Electroluminescent (**EL**) devices have been fabricated using four different polymers with different glass transition temperatures (T//g) dispersed with N,N'-bis-(3-methylphenyl)-N,N'-diphenyl-1,1'-biphenyl-4,4'-diami ne (TPD) as a hole transport layer and tris(8-hydroxyquinoline) **aluminum** (Alq//3) as an emitting layer. It was found that the higher the T//g of the polymer, the longer the lifetime of the device. From observations of TPD-doped polymer films with optical microscope and atomic force microscope, dispersing TPD in the polymers was found to suppress the crystallization that causes the roughness of the film surface. It was also observed that the higher the T//g of the host polymers, the more difficult TPD crystallization was. The property of the **EL** device with **polyethersulfone** (PES) dispersed with TPD was also investigated. The lifetime of **EL** device with the TPD doped PES film was improved more than five times at a current density below 10 mA/cm**2 compared with the device with a conventional TPD hole transport layer. (Author abstract) 8 Refs.

41/3,AB/6 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

05189915 JICST ACCESSION NUMBER: 02A0570757 FILE SEGMENT: JICST-E
Ultra Pure Environment for Ultra Large Scale Integrated Circuits. Influence of Wafer Storage Environment on MOS Device Characteristics.
YOKOYAMA SHIN (1); YOSHINO TAKENOBU (1); SHIBAHARA KENTARO (1); NAKAJIMA ANRI (1); KIKKAWA TAKAMARO (1); SUNAMI HIDEO (1); KHOSRU Q D M (1); FUJII TOSHIAKI (2)
(1) Hiroshima Univ.; (2) Ebara Corp., JPN
Earozoru Kenkyu(Journal of Aerosol Research, Japan), 2002, VOL.17,NO.2, PAGE.96-104, FIG.16, TBL.1, REF.28

02/03/2003

JOURNAL NUMBER: L0641AAA ISSN NO: 0912-2834 CODEN: EAKEE
UNIVERSAL DECIMAL CLASSIFICATION: 621.382.002.2 539.23:54-31
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: The influence of wafer storage environment on oxidation and organic contamination of **Si** surfaces has been investigated. And the electronic reliability of thin (2.8 nm) SiO2 films of metal-oxide-semiconductor (MOS) capacitors and MOS transistors has been measured as a function of the storage method. We found that shielding wafers from visible light is effective to prevent oxidation of **silicon**. Hydrogen terminated p-**Si** (100) (8-12 .OMEGA.cm) wafers were stored in wafer boxes under various brightness levels. The oxidation rate in a dark box (-0 lx) is found to be about one order of magnitude as small as that in a light box (-1,000 lx). The MOS capacitors were fabricated by adding a storage process with various contamination levels before gate oxidation. It was indicated that for samples stored in the **polyethersulfone** (PES) box with a UV/photoelectron cleaning unit, the organic contamination level was substantially reduced, resulting in an improvement of the time dependent dielectric breakdown characteristics of the gate oxides. Furthermore we fabricated n-channel MOS transistors and investigated the influence of the organic contaminant before and after the gate oxidation on hot-electron degradation of the oxide. The wafer surfaces were contaminated with organic gases during the storage in a front opening unified pod (FOUP) made of polycarbonate for 6 h. In the result, the neutral traps were generated by hot-electron injection. It was shown that the density of the generated traps was larger for the pre-oxidation contamination than for the post-oxidation contamination. The model for the trap generation by the organic contamination was also discussed. (author abst.)

41/3,AB/7 (Item 2 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04869564 JICST ACCESSION NUMBER: 01A0432097 FILE SEGMENT: JICST-E
Ultra Clean Technology Using UV/Photoelectron Method for Semiconductor Transportation and Its Effect on MOS Devices.
YOSHINO TAKENOBU (1); YOKOYAMA SHIN (1); FUJII TOSHIAKI (2); SUZUKI TSUKURU (2)
(1) Hiroshima Univ., Res. Center for Nanodevices and Systems; (2) Ebara Corp.
Earozoru Kenkyu(Journal of Aerosol Research, Japan), 2001, VOL.16,NO.1, PAGE.57-64, FIG.17, TBL.1, REF.16
JOURNAL NUMBER: L0641AAA ISSN NO: 0912-2834 CODEN: EAKEE
UNIVERSAL DECIMAL CLASSIFICATION: 621.382.002.2 66.074.2
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: Feasibility of a plastic wafer box with a UV/photoelectron cleaning unit(UV unit) for a practical application has been investigated. Chemical contaminant evaluations for the box air and **Si** wafer surface were carried out with GC/MS. Metal-oxide-semiconductor(MOS) capacitors were fabricated after the storage in various boxes before or after gate oxidation and their reliability tests were carried out. The total ion chromatogram(TIC) spectra showed a dramatical reduction of organic contaminants adsorbed

on **Si** wafers stored in the newly developed poly-ether sulfone(PES) box equipped with the UV unit. We found that the injected charge at which the gate oxide undergoes the final hard breakdown is markedly improved by the installation of the UV unit to the PES box. However, the soft breakdown of gate oxides was so sensitive to the organic contaminants on **Si** surfaces that it hardly depended on the typesed of used storage boxes. We concluded that the PES/UV unit wafer box is useful for the practical wafer box. (author abst.)

41/3,AB/8 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03407842 JICST ACCESSION NUMBER: 97A0797419 FILE SEGMENT: JICST-E
Moisture-proof LED lamp.
OTSUBO SHIGERU (1)
(1) Toshiba Corp.
Toshiba Gijutsu Kokaishu, 1997, VOL.15,NO.51, PAGE.43-44, FIG.2
JOURNAL NUMBER: L0795AAY ISSN NO: 0288-2701
UNIVERSAL DECIMAL CLASSIFICATION: 621.383
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication

41/3,AB/9 (Item 4 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03120494 JICST ACCESSION NUMBER: 97A0230582 FILE SEGMENT: JICST-E
From new application development to full-scale production of heat resistant and transparent **resin, "Arton"** .Construction of the mass-production plant is undertaken.
Jpn. Synth. Rubber Co., Ltd.
Porima Daijesuto(Polymer Digest), 1997, VOL.49,NO.2, PAGE.118-121, TBL.1
JOURNAL NUMBER: F0500ABV ISSN NO: 0386-3700 CODEN: PODAD
UNIVERSAL DECIMAL CLASSIFICATION: 678.5/.8
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication

41/3,AB/10 (Item 5 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03038019 JICST ACCESSION NUMBER: 96A0898895 FILE SEGMENT: JICST-E
Trend and prospect of package development from the viewpoint of patents. 37. **Moisture-proof** film. (2)
YOSHII JUNJI (1)
(1) Kurehapurasuchikkusu
Packpia, 1996, VOL.40,NO.10, PAGE.66-67
JOURNAL NUMBER: S0149ADB ISSN NO: 0916-6629
UNIVERSAL DECIMAL CLASSIFICATION: 621.798 678.06:621.798 621.315.5
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication

02/03/2003

ABSTRACT: When the use of plastic films is broadened from PTP (Press Through Pack) to **moisture-proof** film, the requirements for the performance become more severe. An example is encapsulation film for **EL(electroluminescence(** elements such as **liquid crystal displays**. The life of **EL** elements now used as back light crystal displays. The **moisture-proof** encapsulation film shuts out moisture from entering. However, even excellent **moisture-proof** PCTFE (polychlorotrifluoroethylene) film deterioates at high temperature due to crystallization or under solar light, so various countermeasures are devised. This paper introduces several patent applications in this regards.

41/3,AB/11 (Item 6 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03037518 JICST ACCESSION NUMBER: 96A0886156 FILE SEGMENT: JICST-E
Development of Oranic Electroluminescent Materials.
UEMURA TAKASHI (1); KIMURA HIROYA (1); OKUDA NOBUYUKI (1); OKUDA YASUKO (1); UEBA YOSHINOBU (1); SHIRAKAWA TSUGURU (1); OSAKA HAJIME (1)
(1) Sumitomo Electr. Ind., Ltd.
SEI Tekunikaru Rebyu(Sumitomo Electric Technical Review), 1996, NO.149, PAGE.136-141, FIG.13, TBL.2, REF.10
JOURNAL NUMBER: F0314AAL CODEN: SUDEA
UNIVERSAL DECIMAL CLASSIFICATION: 621.383:535.35 535.376:547
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: We investigated the thermal stability of hole transport films, in which an aromatic diamine derivative(TPD) is dispersed in four types of polymer, and the driving life-time of the organic electroluminescent(**EL**) devices using these hole transport films and **aluminum** quinolinate(Alq3) emittor. It was found that the thermal stability of the film improves with polymers which have a higher glass transition temperature and that the device with a more stable hole transport film has the longer driving life-time. We further studied on the stability of the hole transport film dispersed TPD in **polyethersulfone** (TPD+PES) with a glass transition temperature of 225.DEG.C. and on the driving life-time of the device. Under the constant current drive at a current density of 10mA/cm2, the driving life-time of the device with TPD+PES hole transport film was improved to 235 hours, approximately five times better than that of the device with a hole transport layer of vapor deposited TPD. In order to improve current injection of triazole derivative (ETAZ) which shows novel hole brocking electron transport property, a new triazole derivative (CNTAZ2) having two triazole units and an electron withdrawing cyano groups was synthesized. A device with an electron transport layer of CNTAZ2, an emitting layer of Alq3 and a hole transport layer of TPD+PES was fabricated and the properties of the device were investigated. It was found that CNTAZ2 is a new electron transport material with outstanding electron injection and durability equal to or better than Alq3. (author abst.)

41/3,AB/12 (Item 7 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03025077 JICST ACCESSION NUMBER: 96A0799657 FILE SEGMENT: JICST-E
Properties and Relability of Liquid Type Epoxy **Resin** for LSI Using Printing Encapsulation Systems(PES).
OKUNO ATSUSHI (1); FUJITA NORIKO (1); NAGAI KOICHIRO (1); OYAMA NORITAKA (1); HASHIMOTO TSUNEKAZU (1)
(1) Nihonrekku
Denshi Joho Tsushin Gakkai Ronbunshi. C,2(Transactions of the Institute of Electronics, Information and Communication Engineers. C-2), 1996, VOL.79,NO.8, PAGE.431-439, FIG.12, TBL.4, REF.10
JOURNAL NUMBER: L0196AAD ISSN NO: 0915-1907
UNIVERSAL DECIMAL CLASSIFICATION: 621.315.5
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: On the trend of recent LSI packaging, the moves toward thinning and chip-on-board (COB) are urgent with the development of portable type equipment such as IC card, **LCD**, portable telephone and note book-type computer. In conventional transfer molding, it is becoming difficult to cope with those demands. Moreover, this method has to use an expensive metal mold, and is disadvantageous in economical aspects by the many **resin** losses, and a long manufacturing process. In this paper, for the LSI packaging method substituted for transfer molding, special Printing Encapsulation Systems (PES) were developed. These system are excellent in terms of their mass production capability, thin type packaging of one mm or less in easy enabled, expensive metal mold is unnecessary, and there is hardly a **resin** loss. So, economically very effective.for an encapsulation **resin** applied in the PES, a liquid epoxy **resin** is used. So, the stability of a thixotropic after-printing and hardening is favorable. As a result of examining thixotropic medicine, it was clarified that the minute powder of high purity silica was effective. Then, it was also clarified that printing for many hours was possible. Next, for possible the enlargement of future LSIs, low stress was enabled by denaturing an epoxy with a **silicon resin**. As a result of testing reliability with the ball grid array (a BGA) using the denaturation epoxy **resin** and the LSI of a 10*10mm angle, high reliability was obtained. If the PES method and this low stress epoxy **resin** are used, the applications to the BGA, the PLCC, the CSP, the MCM and the TAB which are new future packagings are expected.

41/3,AB/13 (Item 8 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02977557 JICST ACCESSION NUMBER: 96A0643094 FILE SEGMENT: JICST-E
Plastics for Optical Use. Polyolefin **Resin** for Optical Uses.
KOHARA TEIJI (1)
(1) Nippon Zeon Co., Ltd.
Petorotekku(Petrotech), 1996, VOL.19,NO.7, PAGE.541-545, FIG.5, TBL.4, REF.7
JOURNAL NUMBER: S0836AAD ISSN NO: 0386-2763 CODEN: PTRTD
UNIVERSAL DECIMAL CLASSIFICATION: 678.742 681.7.06
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: Nippon Zeon Co., Ltd. has developed "ZEONEX" the titled **resin**, which is a hydrogenated ring opening polymer from norbornene based monomer."ZEONEX" has superior transprarecny, low

birefringence, superior heat resistance, low hygroscopicity, and suitability for precision molding, and is used for optical lens, prism, optical film for **liquid crystal display** and optical disks.

41/3,AB/14 (Item 9 from file: 94)

02730962 JICST ACCESSION NUMBER: 96A0133628 FILE SEGMENT: JICST-E
Development of transparent conductive substrates for film liquid crystal panel.
NAKAMURA KENJI (1); ISHIBA AKIHIRO (1); MIYAO KENJI (1); GOTO HIDEKI (1); KATSUMURA AKIFUMI (1)
(1) Sumitomo Bakelite Co., Ltd.
Porima Zairyo Foramu Koen Yoshishu, 1995, VOL.4th, PAGE.81-82, FIG.3, TBL.1
JOURNAL NUMBER: L2062AAZ
UNIVERSAL DECIMAL CLASSIFICATION: 678.029.6/.8 621.385:621.397
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication
ABSTRACT: A display unit made of inorganic film with high gas barrier as a transparent conductive film is developed in order to solve display and LC layer. **Polyethersulfone** thin film on which silica, alumina and ITO are deposited by CVD or PVD is prepared. This film was found to have superior moisture resistance, chemical resistance and gas barrier retention.

41/3,AB/15 (Item 10 from file: 94)

02730959 JICST ACCESSION NUMBER: 96A0133625 FILE SEGMENT: JICST-E
Display grade of PFP - **LCD**.
HONDA KEN'ICHI (1); KUROIWA MASAHIRO (1); SUZUKI NOBUTAKA (1); NAGATA MITSUO (1); WADA SHINJI (1)
(1) Seiko Epson Corp.
Porima Zairyo Foramu Koen Yoshishu, 1995, VOL.4th, PAGE.75-76, FIG.3, TBL.1
JOURNAL NUMBER: L2062AAZ
UNIVERSAL DECIMAL CLASSIFICATION: 621.385:621.397
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication
ABSTRACT: The following are pointed out as the above quality items of display to be improved : Flatness, transmission, retardation, contrast, heat-resistance. Fundamental properties of glass and film substrate (PC, PAR and PES), such as Tg, transmission, retardation and water-absorption, were compared. Though the flatness of film substrates was about 10 times as low as the **glass substrate**, it was found that the effects of the poor flatness on the color difference of **LCD** were smaller than estimated.

41/3,AB/16 (Item 11 from file: 94)

02/03/2003

02379735 JICST ACCESSION NUMBER: 95A0730418 FILE SEGMENT: JICST-E
The influence of the constituent elements of **Liquid Crystal Display** on the performance of **Liquid Crystal Display**.
ONISHI HIROYUKI (1); SHIROKURA SAYURI (1)
(1) Rodikku
Denshi Joho Tsushin Gakkai Gijutsu Kenkyu Hokoku(IEIC Technical Report (Institute of Electronics, Information and Communication Enginners), 1995, VOL.95,NO.155(EID95 30-38), PAGE.19-24, FIG.4, TBL.2, REF.3
JOURNAL NUMBER: S0532BBG
UNIVERSAL DECIMAL CLASSIFICATION: 621.385:621.397 544.25
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: The influence of the constituent elements of **Liquid Crystal Display** and Liquid Crystal mixtures on the performance of **Liquid Crystal Display** is examined. Especially the congeniality between Liquid Crystal mixtures and the sealant is examined. The current and holding ratio is changed by the kind of ions and liquid crystals, and the dielectric constant of liquid crystal. Fluoride components used in AM-**LCD** are tolerant of ion. (author abst.)

41/3,AB/17 (Item 12 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02349826 JICST ACCESSION NUMBER: 95A0246853 FILE SEGMENT: JICST-E
Special issue : Polymer film aiming at further performance and function enhancements. To more advanced transparent resin material for glass substitution optics with protruded optical characteristics and high heat stability. Functional norbornene resin film.
HARA YASUO (1)
(1) Jpn. Synth. Rubber Co., Ltd.
Kogyo Zairyo(Engineering Materials), 1995, VOL.43,NO.3, PAGE.28-33, FIG.11, TBL.2
JOURNAL NUMBER: F0172AAZ ISSN NO: 0452-2834 CODEN: KZAIA
UNIVERSAL DECIMAL CLASSIFICATION: 678.5/.8 544.23-16:535/538
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: This paper introduces features and application development of norbornene **resin "ARTON"** film which is advanced transparent resin material for optics and excellent in workability. ARTON is highly heat resistant thermoplastic resin, and excellent in workabilities such as injection molding and extrusion. It is used as electromagnetic wave shield board for CRT, clear electrode for touch panel, clear electrode for **liquid crystal display**, peripheral materials of back light.

41/3,AB/18 (Item 13 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02065223 JICST ACCESSION NUMBER: 94A0495900 FILE SEGMENT: JICST-E
Special issue : Forefront of films. Functional norbornene **resin**, " **ARTON**".Film and applications.

02/03/2003

HARA YASUO (1); SHINOHARA HIRONOBU (1)
(1) Jpn. Synth. Rubber Co., Ltd.
Gekkan Shinsozai(New Materials - Technology & Applications -), 1994, VOL.5,NO.5, PAGE.36-40, FIG.2, TBL.4
JOURNAL NUMBER: L1184AAH ISSN NO: 0917-0499 CODEN: SSOZE
UNIVERSAL DECIMAL CLASSIFICATION: 678.5/.8
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: Japan Synthetic Rubber Co. Ltd. has developed "ARTON", a norbornen based thermoplastic, usable as substitution for glass due to similarity to glass in almost every properties. The characteristics of "ARTON"are high transparency, heat resistance, low water absorbency and high mechanical strength, which are compared with those of PMMA and PC.The following applications are explained : Films for an overhead projector, transparent products sputtered with an electroconductive material such as ITO, and light diffusion films for a component of a **liquid crystal display**-element.

41/3,AB/19 (Item 14 from file: 94)
DIALOG(R)File 94:JICST-EPlus

01202165 JICST ACCESSION NUMBER: 91A0235811 FILE SEGMENT: JICST-E
ZnS:Mn high luminance thin-film electroluminescent panel.
MITSU TOSHIHIRO (1); ONUKI YUKIO (1); SASAKI NORIKO (1); KONDO AKIO (1)
(1) Toso
Toso Kenkyu Hokoku(Journal of Tosoh Research), 1991, VOL.35,NO.1, PAGE.31-36, FIG.4, TBL.5, REF.2
JOURNAL NUMBER: F0529ABM ISSN NO: 0914-3106
UNIVERSAL DECIMAL CLASSIFICATION: 621.385:621.397
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: A new, highly reliable sealing technology for thin film **EL** panels has been developed and its details have been presented in this paper. The new technology has three remarkable features: 1) Total solid type structure using polymer **resin** instead of conventional oil. 2) Easiness of fabrication by a new geometry of through holes. 3) Low fabrication cost due to the use of flat glass plate and spacing material for rear glass instead of concave glass plate. This newly developed seal has proved to be quite resistible to various durable tests such as high temperature and high humidity accelerated life test, high temperature and low temperature cycle test, and low temperature test. Thus, the **EL** panels previously developed by the authors as high luminance **EL** panels and sealed by the procedure reported here have shown no change after 2,000 hours under the accelerated test condition of temperature 70.DEG.C. and relative humidity 85%(which corresponds to more than 10 years life under normal environment). (author abst.)

41/3,AB/20 (Item 1 from file: 99)
DIALOG(R)File 99:Wilson Appl. Sci & Tech Abs

2482934 H.W. WILSON RECORD NUMBER: BAST02122115
Single electron transistors with high-quality superconducting niobium

islands
Dolata, R; Scherer, H; Zorin, A. B
Applied Physics Letters v. 80 no15 (Apr. 15 2002) p. 2776-8
DOCUMENT TYPE: Feature Article ISSN: 0003-6951

ABSTRACT: The fabrication of deep submicron **Al**/AlOx /Nb tunnel junctions and single electron transistors with Nb islands, by electron beam gun shadow evaporation, is reported. Thermostable polymer **polyethersulfone** and **Ge** stencil masks are used as they are mechanically stable up to 200[degree]C and have low outgassing characteristics. The resulting structures possess good superconducting properties and have a gap energy of up to 2DNb = 2.5 meV. The **transistor** I(U) characteristics have features specific to the tunneling of single Cooper pairs and significant gate modulation in the superconducting and the normal state.

41/3,AB/21 (Item 1 from file: 305)
DIALOG(R)File 305:Analytical Abstracts

157711 AA Accession No.: 52-10-J-00181 DOC. TYPE: Journal
Solid-state reference electrode based on bilayer coating with poly(p,p'-biphenol) (poly(biphenyl-4,4'-diol)) and polyimide films for the gate of field-effect **transistor**.
AUTHOR: Oyama, N.; Ohsaka, T.; Ikeda, S.; Okuaki, K.
CORPORATE SOURCE: Dept. Appl. Chem., Fac. Technol., Tokyo Univ. Agric. Technol., Tokyo 184, Japan
JOURNAL: Anal. Sci., Volume: 5, Issue: 6, Page(s): 729-734
CODEN: ANSCEN ISSN: 0910-6340
PUBLICATION DATE: Dec 1989 (891200) LANGUAGE: English
ABSTRACT: A disc (area 0.2 cm2) of **basal**-plane pyrolytic graphite was connected to the gate of a commercially available MOSFET chip via a bonding wire in such a way that only the graphite could be exposed to the electrolyte soln. The wire and the graphite, apart from its electrode surface, were covered with **watertight** epoxy-**resin**, then the graphite was coated by electro-oxidative polymerization (at 1.4 V vs. the SCE) of 40mM-biphenyl-4,4'-diol in acetonitrile containing 0.2M-NaClO4. This poly(biphenyl-4,4'-diol) layer was coated with a soln. of the photosensitive polyimide precursor Photoneece UR-3140 (Toray Industries) in 2-methoxyethanol, and the assembly was pre-baked at 80.degree. for 1 h before exposing the coating to UV radiation for 30 s and curing by **gradual** heating from 180.degree. to 400.degree.. Although the FET responded to anions, the response to various electrolyte ions and to pH was negligible at constant concn. (e.g., 0.1M) of electrolyte, allowing its use as a reference electrode; it was insensitive to dissolved O and responded only slightly to CO2, and remained stable for 22 days if stored in buffered soln. (pH 7.0). The FET should be applicable in conjunction with **conventional** ISFET in **biological** systems.

41/3,AB/22 (Item 1 from file: 96)
DIALOG(R)File 96:FLUIDEX

00209491 FLUIDEX NO: 0217460 SUBFILE: CH
Providing a new lease on life for a tired water storage tank the Holden Massachusetts story.
AUTHOR(S): Fuller C.E.; Berg A.R.
J. New England Water Works Assoc., vol.102, no.2, May 1988, p.75-102., 1988

02/03/2003

DOCUMENT AVAILABLE: YES
ISSN: 0028-4939
RECORD TYPE: ABSTRACT
LANGUAGES: English

Outlines construction, operation and initial treatment of leakage problems of the Highland water storage tank, Holden Massachusetts. Repairs involved excavation, filling voids with concrete, placement of a waterproof membrane. Failure of the floor of the tank, and near total collapse of the dams are attributed to deterioration of the **watertight** liner details, and rusting of the metal retaining plate, which in turn **led** to a space between the liner retainer and the wall. Water could then flow to the underside of the liner. Outlines investigation of repair or replacement options. Describes design of the repair, which included 12 inch thick heavily reinforced concrete floor slats, installation of an underdrain, Thoroseal wall coating and fully triangulated space truss **aluminium**. Gives brief details of testing, notably the assessment of leakage.

41/3,AB/23 (Item 1 from file: 103)
DIALOG(R)File 103:Energy SciTec

02026121 EDB-87-154076
Title: Possible applications of artificially strengthening longwall working faces and access rooms
Author(s): Bijelic, V.; Ivkovic, M.; Slijepcevic, S.; Miuljanovic, J.; Hamzic, D.; Gagic, D.
Affiliation: RO-RMU Zenica (Yugoslavia)
Title: 5. Yugoslav symposium on underground exploitation
Original Title: 5. Jugoslovanski simpozij o podzemski eksploataciji
Conference Title: 5. Yugoslav symposium on underground exploitation
Conference Location: Ljubljana, Yugoslavia Conference Date: 20 Oct 1986
Publisher: Savez Rudarskih, Geoloskih I Metalurskih Inzenjera I Tehnicara Jugoslavije, Komitet Za Podzemnu Eksploataciju,Ljubljana, Yugoslavia
Publication Date: 1986
p 85-98, Topic II
Report Number(s): CONF-8610329-
Language: Serbo-Croatian
Abstract: Advantages of artificial roof strengthening are discussed, particularly when gypsum, anhydrite, cement and fly ash (from thermal power stations) are used for combined roof grouting and bolting in longwall mining or for **airtight** isolation of the goaf. At Zenica and Morava coal mines polyurethane **resins** were also used for roof strengthening and fire prevention at longwall workfaces. Uncontrolled caving often **led** to coal loss and spontaneous ignition of coal in the goaf. Several practical applications of roof strengthening in Yugoslav coal mines are described. A department studying polyurethane application in coal mines has been formed at the Institute of Polyurethane at Tuzla. Use of polyurethane in roof strengthening as normal practice in Yugoslav coal mines is foreseen. 3 refs.

02/03/2003

43/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

7205952 INSPEC Abstract Number: A2002-08-8120S-012
Title: Thermally crosslinkable poly(phenylene sulfide)/poly(ether sulfone)/polymerization of monomer reactant-polyimide blends
Author(s): Mingfang Lai; Yuming Yang; Jingjiang Liu
Author Affiliation: Inst. of Appl. Chem., Acad. Sinica, Changchun, China
Journal: Journal of Applied Polymer Science vol.83, no.13 p.2906-14
Publisher: Wiley,
Publication Date: 28 March 2002 Country of Publication: USA
ISSN: 0021-8995
SICI: 0021-8995(20020328)83:13L.2906:TCPP;1-7
Material Identity Number: B926-2002-013
Language: English
Abstract: The effects of thermally crosslinkable polymerization of monomer reactant-polyimide (POI) on the miscibility, morphology, and crystallization of partially miscible poly(ether sulfone) (PES)/poly(phenylene sulfide) (PPS) blends were investigated with differential scanning calorimetry and scanning electron microscopy. The addition of POI **led** to a significant reduction in the size of PPS particles, and the interfacial tension between PPS and crosslinked POI was smaller than that between PES and crosslinked POI. During melt blending, crosslinking and grafting reactions of POI with PES and PPS homopolymers were detected; however, the reaction activity of POI with PPS was much higher than that with PES. The crosslinking and grafting reactions were developed further when blends were annealed at higher temperatures. Moreover, POI was an effective nucleation agent of the crystallization of PPS, but crosslinking and grafting hindered the crystallization of PPS. The final effect of POI on the crystallinity of the PPS phase was determined by competition between the two contradictory factors. The crosslinking and grafting reactions between the two components was controlled by the dosage of POI in the blends, the premixing sequence of POI with the two components, the annealing time, and the temperature.
Subfile: A

43/3,AB/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

6166957 INSPEC Abstract Number: A1999-06-6630J-007
Title: Transport properties of methanol in blends of a liquid crystalline copolyester and **polyethersulfone**
Author(s): Wiberg, G.; Hedenqvist, M.S.; Boyd, R.H.; Gedde, U.W.
Author Affiliation: Dept. of Polymer Technol., R. Inst. of Technol., Stockholm, Sweden
Journal: Polymer Engineering and Science vol.38, no.10 p.1640-8
Publisher: Soc. Plastics Eng,
Publication Date: Oct. 1998 Country of Publication: USA
CODEN: PYESAZ ISSN: 0032-3888
SICI: 0032-3888(199810)38:10L.1640:TPMB;1-G
Material Identity Number: P298-1998-011
Language: English
Abstract: Data for the diffusivity and solubility of methanol in blends of **polyethersulfone** (PES) and a liquid crystalline copolyester (poly(hydroxy-benzoic acid (73 mol%)-cohydroxy-naphthoic acid (27 mol%)) (LCP) are reported. Samples taken from injection molded and compression

molded specimens over a wide composition range were studied by gravimetry (sorption and desorption), dielectric spectroscopy, differential scanning calorimetry and scanning electron microscopy. The sorption of methanol in PES **led** to the formation of an ordered phase. The sorption curves were S-shaped and they could be described by a diffusion model assuming a concentration-dependent diffusivity and time-dependent boundary conditions. The solubility of methanol in the blends was strictly proportional to the PES content. The zero-concentration-diffusivity decreased strongly with increasing LCP content and it was dependent on the morphology. Injection molding yielded samples with a fibrillar LCP phase with a greater continuity of the PES component and a high diffusivity (in relative terms). Compression molding **led** to samples with a more continuous LCP component even at low LCP contents and a low diffusivity.
Subfile: A

43/3,AB/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

5961607 INSPEC Abstract Number: B9808-7260-024
Title: Developments in liquid crystal (**LCD**) active matrix displays
Author(s): Luder, E.
Author Affiliation: Stuttgart Univ., Germany
Journal: Fernseh- und Kino-Technik vol.52, no.3 p.126-8, 130-2
Publisher: Huthig,
Publication Date: March 1998 Country of Publication: Germany
CODEN: FNKTAH ISSN: 1430-9947
SICI: 1430-9947(199803)52:3L.126:DLCA;1-W
Material Identity Number: F033-98004
Language: German
Abstract: The article describes the construction of active matrix **liquid crystal displays** (AMLCD) based on thin-film transistors. These displays have achieved a turnover of nearly 7 billion dollars in 1997, for sales of 23 million displays. Their production by plasma enhanced chemical vapour deposition (PECVD) is described. Details are given of the top gate thin film transistors employed and reflective liquid crystal cells are illustrated. The use of a brightness-enhancement foil is shown and video pictures produced on these enhanced displays are reproduced. The technical requirements for foil substrates are listed and the use of polyimide, polyarylate (PAR), polyacrylate, **polyethersulfone** (PES), polyolefin, polycarbonate and polyethylene terephthalate (PET) is recommended for foil substrates.
Subfile: B

43/3,AB/4 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

4879180 INSPEC Abstract Number: A9505-6570-001
Title: Thermal and mechanical properties of injection molded liquid crystalline polymer/amorphous polymer blends
Author(s): Engberg, K.; Stromberg, O.; Martinsson, J.; Gedde, U.W.
Author Affiliation: Dept. of Polymer Technol., R. Inst. of Technol., Stockholm, Sweden
Journal: Polymer Engineering and Science vol.34, no.17 p.1336-45
Publication Date: mid-Sept. 1994 Country of Publication: USA
CODEN: PYESAZ ISSN: 0032-3888

Language: English
Abstract: Injection molded samples of binary blends of Vectra (LCP) and the three amorphous polymers **polyethersulfone** (PES), polycarbonate(PC), and aromatic poly(ester carbonate) (APEC) have been subjected to morphological and rheological characterization, and coefficients of linear thermal expansion and Young's moduli have been determined. The Young's modulus of the PES/LCP blends exhibited a near lower-bound behavior that could be predicted by the one-adjustable-parameter equations of Halpin-Tsai (xi =0.18) and Takayanaga (b=0.23), whereas the coefficients of linear thermal expansion followed the Takayanaga equation with a value of b=0.50. The chain orientation of the LCP component was essentially constant in all PES/LCP blends with a Herman's orientation parameter of 0.39+or-0.03. Transesterification reactions **led** to randomization of the constituents of the PC/LCP and APEC/LCP blends. The effect was more pronounced in the PC/LCP blends. The introduction of the LCP into the PC/LCP blends **led** to no reduction in melt viscosity and no self-reinforcement. APEC/LCP exhibited self-reinforcement in blends with a content greater than 27 vol% LCP, and especially the blend with 67 vol% LCP. The self-reinforcement was caused by the presence of an oriented LCP phase, confirmed by X-ray diffraction, and by improved interfacial bonding, presumably resulting from the transesterification reactions occurring at the phase boundaries.
Subfile: A

43/3,AB/5 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

02657934 INSPEC Abstract Number: B86031510
Title: TN-**LCD** using polarizers as the main body
Author(s): Andoh, T.; Oh-ishi, H.; Kobayashi, S.; Mameuda, E.; Ishihara, N.; Sasaki, Y.
Author Affiliation: Tokyo Univ. of Agric. & Technol., Japan
Conference Title: 1985 SID International Symposium. Digest of Technical Papers p.71-3
Editor(s): Morreale, J.
Publisher: Pallisades Inst. Res. Services, New York, NY, USA
Publication Date: May 1985 Country of Publication: USA 416 pp.
U.S. Copyright Clearance Center Code: 0097-0966X/85/0000-071-$1.00+.00
Conference Date: 30 April-2 May 1985 Conference Location: Orlando, FL, USA
Language: English
Abstract: Polarizer made of sandwiched polyester or **polyethersulfone** -polyvinylalcohol, whose one side is coated with patterned indium tin oxide ITO, are used as the main body of a TN-type **LCD** eliminating separate assembly and polarizer attachment. Such a TN-**LCD** with optical performance comparable to conventional TN-LCDs having a total thickness of 0.5 mm excluding the mirror, has been constructed.
Subfile: B

43/3,AB/6 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05445043
E.I. No: EIP99124956213

02/03/2003

Title: Application of surface modifying macromolecules in **polyethersulfone** membranes: influence on PES surface chemistry and physical properties
Author: Pham, Vu Anh; Santerre, J. Paul; Matsuura, Takeshi; Narbaitz, Roberto M.
Corporate Source: Univ of Toronto, Toronto, Ont, Can
Source: Journal of Applied Polymer Science v 73 n 8 1999. p 1363-1378
Publication Year: 1999
CODEN: JAPNAB ISSN: 0021-8995
Language: English
Abstract: Novel surface modifying macromolecules (SMMs) were developed for incorporation into **polyethersulfone** (PES) membranes, intended for pervaporation applications. These materials were synthesized with a diisocyanate, polypropylene oxide (PPO), and a fluoro-alcohol, and characterized for elemental analysis, molecular weight, and glass transition temperatures. PES/SMM blends with eight types of SMMs were characterized for surface and physical properties and compared with PES. Water droplet contact angle measurements and X-ray photoelectron spectroscopy data showed that the SMMs migrated to the surface and rendered the PES material more hydrophobic. While advancing contact angle data were equivalent to those of pure Teflon, the highest average values of receding angles of these systems were less than those of commercial Teflon. The opaqueness of PES/SMMs films and data from differential scanning calorimetry experiments showed that the SMMs were either immiscible or only partially miscible with PES. It was also observed, for a fixed PES concentration of 25 wt %, that increases in the molecular weight of the SMMs and the weight fraction of PPO in the SMMs **led** to phase separation in the ternary PES/SMMs/dimethylacetamide (i.e., membrane casting solution) system. On the other hand, in the binary PES/SMMs system (i.e., cast membrane film), an increasing weight fraction of fluorine in the SMMs contributed to an increase in the phase separation. (Author abstract) 41 Refs.

43/3,AB/7 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02198209
E.I. Monthly No: EI8705045072
Title: EVALUATION OF **LCD** 'S RELIABILITY BY PURSUING THE T//N//I CHANGE IN **LCD** CELL CONSISTING OF A FILM SUBSTRATE.
Author: Matsui, Ichiro
Corporate Source: Sumitomo Bakelite Co, Amagasaki, Jpn
Source: Chem Express v 2 n 1 Jan 1987 p 77-80
Publication Year: 1987
CODEN: CHEXEU
Language: ENGLISH
Abstract: In the **liquid crystal display** consisting of a transparent electrode based on a film substrate, the permeation of oxygen is a cause of the shortening of the cell's span of life. By pursuing the change of a phase transition point (T//N//I) of liquid crystals as an evaluating method, we tested cells made of several substrates with various levels of oxygen gas permeation. As a result, we found a correlation between the oxygen gas permeability of substrates and the change of T//N//I. (Edited author abstract) 2 refs.

43/3,AB/8 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02/03/2003

01897757
E.I. Monthly No: EIM8510-060305
Title: INTEGRATION OF **LCD** AND DRIVE ELECTRONICS ONTO PLASTIC FILM.
Author: Matsukawa, Fumio; Arai, Hirotsugu; Hayashi, Shigeo
Corporate Source: Mitsubishi Electric Corp, Products Development Lab, Jpn
Conference Title: Automotive Electronic Displays and Information Systems. (Papers presented at the 1985 SAE International Congress & Exposition. Papers presented at the 1985 SAE International Congress & Exposition.)
Conference Location: Detroit, MI, USA Conference Date: 19850225
E.I. Conference No.: 06964
Source: SAE Special Publications SP-608. Publ by SAE, Warrendale, PA, USA p 1-4
Publication Year: 1985
CODEN: SAESA2 ISSN: 0099-5908 ISBN: 0-89883-829-0
Language: English
Abstract: A new **liquid crystal display** module integrating a LC cell of reflective type, printed circuits and a driver IC on a piece of plastic (**polyethersulfone**) is developed for automotive dashboard instrumentation. The module, which includes an LC cell with 22 leads to display, can be interfaced directly to a microprocessor with only 8 external leads. The module is flexible so that compact assembly with the systems is possible. (Author abstract.) 5 refs.

43/3,AB/9 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

11222237 Genuine Article#: 625TX Number of References: 40
Title: Side chain thermotropic liquid crystalline polysulfone obtained from polysulfone udel by chemical modification (ABSTRACT AVAILABLE)
Author(s): Cozan V (REPRINT) ; Avram E
Corporate Source: Romania Acad,Petru Poni Inst Macromol Chem,41A Aleea Grigore Ghica Voda 41A/RO-6600 Iasi//Romania/ (REPRINT); Romania Acad,Petru Poni Inst Macromol Chem,RO-6600 Iasi//Romania/
Journal: EUROPEAN POLYMER JOURNAL, 2003, V39, N1 (JAN), P107-114
ISSN: 0014-3057 Publication date: 20030100
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND
Language: English Document Type: ARTICLE
Abstract: Polysulfone udel was chemically functionalized with chloromethylene functional groups via the chloromethylation reaction. A new azomethine dimesogen containing one phenolic hydroxyl functional group was recently synthesized and proved to exhibit a large nematic mesophase range in the liquid state. Further reaction of the dimesogen with the functionalized polysulfone using a transquaternization reaction **led** to new polysulfones bearing pendant rigid dimesogenic units-no spacer being involved in the chemical design of the polymer. The polymers were characterized by IR, H-1 NMR spectroscopy techniques, and their thermotropic liquid crystallinity behaviour was studied by optical polarizing microscopy (PLM) and DSC measurements. Enantiotropic nematic mesophases were observed under the PLM. A dependence of the melting temperature on the degree of substitution was noticed.

43/3,AB/10 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02/03/2003

10598943 Genuine Article#: 546VG Number of References: 29
Title: Sulfonation of polysulfones: Suitability of the sulfonated materials for asymmetric membrane preparation (ABSTRACT AVAILABLE)
Author(s): Blanco JF (REPRINT) ; Nguyen QT; Schaetzel P
Corporate Source: Univ Rouen,CNRS, UMR 6522, Lab Polymeres Biopolymeres Membranes,F-76821 Mont St Aignan//France/ (REPRINT); Univ Rouen,CNRS, UMR 6522, Lab Polymeres Biopolymeres Membranes,F-76821 Mont St Aignan//France/; Univ Caen,IUT Caen, Lab Thermodynam Procedes,F-14032 Caen//France/
Journal: JOURNAL OF APPLIED POLYMER SCIENCE, 2002, V84, N13 (JUN 24), P 2461-2473
ISSN: 0021-8995 Publication date: 20020624
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
Language: English Document Type: ARTICLE
Abstract: The effect of the starting polymer on the reaction of sulfonation of polysulfones was investigated. When concentrated sulfuric acid is used as the sulfonation reagent in an organic solvent-free reaction, a polymer degradation equally occurs, leading to a decrease in the yield of product recovery. Poly(ether sulfone) Cardo appears to be the most resistant to chain scission in the medium and a control of the sulfonation degree can be performed via the reaction condition control. The reaction can be monitored by UV-Visible spectrophotometry. Phase inversion by immersion of a AT-methyl-2-pyrrolidone-polymer dope in water **led** to asymmetric membranes with an average pore size in the range of that of ultrafiltration and that of nanofiltration membranes. The latter membranes can only be obtained at high polymer concentrations and at moderate sulfonation degrees. (C) 2002 Wiley Periodicals, Inc.

43/3,AB/11 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10387750 Genuine Article#: 520YA Number of References: 35
Title: Toughening of cycloaliphatic epoxy resins by poly(ethylene phthalate) and related copolyesters (ABSTRACT AVAILABLE)
Author(s): Iijima T (REPRINT) ; Fujimoto KI; Tomoi M
Corporate Source: Yokohama Natl Univ,Fac Engn, Dept Appl Chem, Hodogaya Ku,Tokiwadai 79-5/Yokohama/Kanagawa 240/Japan/ (REPRINT); Yokohama Natl Univ,Fac Engn, Dept Appl Chem, Hodogaya Ku,Yokohama/Kanagawa 240/Japan/
Journal: JOURNAL OF APPLIED POLYMER SCIENCE, 2002, V84, N2 (APR 11), P 388-399
ISSN: 0021-8995 Publication date: 20020411
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
Language: English Document Type: ARTICLE
Abstract: Poly(ethylene phthalate) (PEP) and poly(ethylene phthalate-co-ehtylene terephthalate) were used to improve the brittleness of the cycloaliphatic epoxy resin 3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexane carboxylato (Celoxide 2021(TM)), cured with methyl hexahydrophthalic anhydride. The aromatic polyesters used were soluble in the epoxy resin without solvents and effective as modifiers for toughening the cured epoxy resin. For example, the inclusion of 20 wt % PEP (MW, 7400) **led** to a 130% increase in the fracture toughness (K-JC) of the cured rosin with no loss of mechanical and thermal properties. The toughening mechanism is discussed in terms of the morphological and dynamic viscoelastic behaviors of the modified epoxy resin system. (C) 2002 John Wiley Sons, Inc.

43/3,AB/12 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10129032 Genuine Article#: 487ZN Number of References: 42
Title: Preparation of novel soluble poly(ester imide)s containing a trimellitimide moiety and their use as modifiers for aromatic diamine-cured epoxy resin (ABSTRACT AVAILABLE)
Author(s): Iijima T (REPRINT) ; Hamakawa S; Tomoi M
Corporate Source: Yokohama Natl Univ,Fac Engn, Dept Appl Chem, Hodogaya Ku,Tokiwada 79-5/Yokohama/Kanagawa 2408521/Japan/ (REPRINT); Yokohama Natl Univ,Fac Engn, Dept Appl Chem, Hodogaya Ku,Yokohama/Kanagawa 2408521/Japan/
Journal: POLYMER INTERNATIONAL, 2001, V50, N11 (NOV), P1214-1222
ISSN: 0959-8103 Publication date: 20011100
Publisher: JOHN WILEY & SONS LTD, BAFFINS LANE CHICHESTER, W SUSSEX PO19 1UD, ENGLAND
Language: English Document Type: ARTICLE
Abstract: Poly(ester imide)s, prepared by the reaction of phthalic anhydride, N-(4-carboxyphenyl) trimellitimide and 1,2-ethanediol, were used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with 4,4'-diaminodiphenyl sulfone (DDS). The poly(ester imide)s include poly(ethylene phthalate-co-ethylene N-(1,4-phenylene) trimellitimide dicarboxylate)s (PESIs) having 10, 20 and 30 mol% trimellitimide (TI) units, respectively. PESIs having 10 and 20 mol% TI units were effective as modifiers for toughening the cured epoxy resin. For example, the inclusion of 20 wt% of PESI (20 mol% TI unit, (M) over bar (W) 19300 gmol(-1)) **led** to a 55% increase in the fracture toughness (KIC) of the cured resin (with an increase in flexural strength and modulus) and the modified resin had a particulate morphology. PESI having 30 mol% TI units was not effective because of degradation of the modifier by DDS. The toughening mechanism is discussed in terms of morphological and dynamic viscoelastic behaviour of the modified epoxy resin system. (C) 2001 Society of Chemical Industry.

43/3,AB/13 (Item 5 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09965036 Genuine Article#: 469XB Number of References: 24
Title: Fouling behavior of a pilot scale inside-out hollow fiber UF membrane during dead-end filtration of tertiary wastewater (ABSTRACT AVAILABLE)
Author(s): Decarolis J; Hong SK (REPRINT) ; Taylor J
Corporate Source: Univ Cent Florida,Dept Civil & Environm Engn,POB 162450/Orlando//FL/32816 (REPRINT); Univ Cent Florida,Dept Civil & Environm Engn,Orlando//FL/32816
Journal: JOURNAL OF MEMBRANE SCIENCE, 2001, V191, N1-2 (SEP 30), P165-178
ISSN: 0376-7388 Publication date: 20010930
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE
Abstract: A series of pilot-scale filtration experiments were performed systematically under various operating conditions to investigate the fouling behavior of ultrafiltration (UF) membranes to treat tertiary wastewater for resuse. All experiments were conducted using a pilot system, which consisted of six inside-out capillary **polyether sulfone** UF membrane modules (molecular-weight cutoff = 150,000

Da), arranged in parallel configuration. The pilot unit was operated in dead-end filtration mode and the membranes were frequently backwashed with chlorinated water. Results of this research clearly indicated that the productivity of the UF membranes, measured by the specific water flux (K-w), declined much faster as operating flux increased. This observation was attributed to enhanced solid and organic loading to the membrane surface at higher operating fluxes. Furthermore, the analysis of K-w variation against filtrate volume showed larger productivity reduction per foulant mass loading during operation at high flux rates, suggesting the formation of more compact cake layers which were not easily removed during backwashing. Pilot study results also demonstrated that increasing backwashing with chlorine addition significantly improved membrane productivity, primarily due to enhanced foulant removal by organic oxidation and biogrowth control. In addition, flux enhancement per backwashing volume increased with decreasing time between backwashing events. Ferric chloride pretreatment also markedly enhanced membrane productivity by increasing particle floc size, which **led** to decreased pore plugging, reduced cake layer resistance, and enhanced backwashing efficiency.

43/3,AB/14 (Item 6 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09618510 Genuine Article#: 427BN Number of References: 19
Title: Novel hydrophilic membrane materials: sulfonated **polyethersulfone** Cardo (ABSTRACT AVAILABLE)
Author(s): Blanco JF; Nguyen QT (REPRINT) ; Schaetzel P
Corporate Source: Univ Rouen,Lab Polymeres Biopolymeres Membranes, CNRS, UMR 6522,F-76821 Mt St Aignan//France/ (REPRINT); Univ Rouen,Lab Polymeres Biopolymeres Membranes, CNRS, UMR 6522,F-76821 Mt St Aignan//France/; Univ Caen,IUT Caen, Lab Thermodynam Proc,F-14032 Caen//France/
Journal: JOURNAL OF MEMBRANE SCIENCE, 2001, V186, N2 (MAY 30), P267-279
ISSN: 0376-7388 Publication date: 20010530
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE
Abstract: Sulfonated **polyethersulfone** Cardo was prepared by solvent-free reaction of concentrated sulfuric acid on the polymer. The polymer can be sulfonated to different degrees by control of the reaction temperature and time. The degradation of it main chain was shown to occur at high reaction temperature or at very long time. Higher sulfonation obtained at longer reaction times **led** to soluble polyelectrolytes. Polymers with an ion exchange capacity lower than 1.75 equiv. kg(-1) are not soluble in water while bring hydrophilic. Asymmetric membranes can be prepared from the latter polymers by the wet phase-inversion method with water as the precipitation medium. They can be used as hydrophilic membranes for ultrafiltration or nanofiltration.

43/3,AB/15 (Item 7 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08880825 Genuine Article#: 340AV Number of References: 29
Title: Preparation of poly(1,4-cyclohexylenedimethylene phthalate)s and their use as modifiers for aromatic diamine-cured epoxy resin (

ABSTRACT AVAILABLE)
Author(s): Iijima T (REPRINT) ; Hamakawa S; Tomoi M
Corporate Source: YOKOHAMA NATL UNIV,FAC ENGN, DEPT APPL CHEM, HODOGAYA KU, TOKIWADAI 79-5/YOKOHAMA/KANAGAWA 240/JAPAN/ (REPRINT)
Journal: POLYMER INTERNATIONAL, 2000, V49, N8 (AUG), P871-880
ISSN: 0959-8103 Publication date: 20000800
Publisher: JOHN WILEY & SONS LTD, BAFFINS LANE CHICHESTER, W SUSSEX PO19 1UD, ENGLAND
Language: English Document Type: ARTICLE
Abstract: Poly(1,4-cyclohexylenedimethylene phthalate) s, prepared by the reaction of phthalic anhydride and 1, 4-cyclohexane dimethanol (35/65 or 73/27 mol% cis/trans or trans alone), have been used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with 4,4'-diaminodiphenyl sulfone. The aromatic polyesters include poly(cis/trans-1,4-cyclohexylenedimethylene phthalate) (PCP) based on a commercial cyclohexane dimethanol, poly(trans-1,4-cyclohexylenedimethylene phthalate) (trans-PCP) and poly(cis/trans-1,4-cyclohexylenedimethylene phthalate) (cis-rich PCP) prepared from a cis-rich diol. The polyesters used were soluble in the epoxy resin without solvents and were effective as modifiers for toughening the cured epoxy resin. For example, the inclusion of 20wt% of PCP (MW 6300 g mol(-1)) **led** to an 80% increase in the fracture toughness (K-IC) of the cured resin with no loss of mechanical and thermal properties. The toughening mechanism is discussed in terms of morphological and dynamic viscoelastic behaviours of the modified epoxy resin system. (C) 2000 Society of Chemical Industry.

43/3,AB/16 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

07491247 Genuine Article#: 173BM Number of References: 31
Title: Toughened interpenetrating polymer network materials based on unsaturated polyester and epoxy (ABSTRACT AVAILABLE)
Author(s): Lin MS (REPRINT) ; Liu CC; Lee CT
Corporate Source: NATL CHIAO TUNG UNIV,DEPT APPL CHEM/HSINCHU 30050//TAIWAN/ (REPRINT)
Journal: JOURNAL OF APPLIED POLYMER SCIENCE, 1999, V72, N4 (APR 25), P 585-592
ISSN: 0021-8995 Publication date: 19990425
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012
Language: English Document Type: ARTICLE
Abstract: Simultaneous interpenetrating polymer networks (IPNs) based on epoxy (diglycidyl ether of bisphenol A) and unsaturated polyester (UP) were prepared by using m-xylenediamine and benzoyl peroxide as curing agents. A single glass transition temperature for each IPN was observed with differential scanning calorimetry, which suggests good compatibility of epoxy and UP. This compatibility was further confirmed by the single damping peak of the rheometric dynamic spectroscopy. Curing behaviors were studied with dynamic differential scanning calorimetry, and the curing rates were measured with a Brookfield RTV viscometer. It was noted that an interlock between the two growing networks did exist and **led** to a retarded viscosity increase. However, the hydroxyl end groups in UP catalyzed the curing reaction of epoxy; in some IPNs where the hydroxyl concentration was high enough, such catalytic effect predominated the network interlock effect, leading to fast viscosity increases. In addition, the entanglement of the two interlocked networks played an important role in cracking energy absorption and reflected in a toughness improvement. (C) 1999 John Wiley & Sons, Inc.

43/3,AB/17 (Item 9 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05742691 Genuine Article#: WV082 Number of References: 23
Title: Toughening of epoxy resins with thermoplastics .3. An investigation into the effects of composition on the properties of epoxy resin blends (ABSTRACT AVAILABLE)
Author(s): Hourston DJ (REPRINT) ; Lane JM; Zhang HX
Corporate Source: LOUGHBOROUGH UNIV TECHNOL,INST POLYMER TECHNOL & MAT ENGN/LOUGHBOROUGH LE11 3TU/LEICS/ENGLAND/ (REPRINT); UNIV LANCASTER,CTR POLYMER/LANCASTER LA1 4YA//ENGLAND/
Journal: POLYMER INTERNATIONAL, 1997, V42, N4 (APR), P349-355
ISSN: 0959-8103 Publication date: 19970400
Publisher: JOHN WILEY & SONS LTD, BAFFINS LANE CHICHESTER, W SUSSEX, ENGLAND PO19 1UD
Language: English Document Type: ARTICLE
Abstract: Three different epoxy resins, based on the diglycidylether of bisphenol A (DGEBA), triglycidyl-p-aminophenol (TGPAP) and tetraglycidyldiaminodiphenylmethane (TGDDM), which are di-, tri- and tetrafunctional, respectively, were mixed in varying proportions and cured with both 3,3'-diaminodiphenylsulphone and 4,4'-[1,4-phenylene(1-methylethylidene)]bis(2,6-dimethylbenzenamine) (EPON 1062-M from Shell). All the blends could be satisfactorily cured and gave homogeneous materials. The dynamic mechanical and fracture properties of the cured materials were measured. It was found that the glass transition temperature varied with composition systematically, whereas values of the strain energy release rate (G(1c)) and the stress intensity factor (K-1c) showed relatively small variations with the blend composition. Toughened epoxy resins were prepared by adding a polyetherimide (PEI), in varying proportions, to the resin mixture. The 'toughenabilities' of different resins, or resin mixtures, were compared. This showed that the 75/25 TGPAP/ DGEBA resin mixture was the most toughenable. Adding 20% of PEI **led** to a more than three-fold increase of the G(1c) value.

43/3,AB/18 (Item 10 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05274765 Genuine Article#: VM130 Number of References: 53
Title: FORMATION, STABILITY, AND PROPERTIES OF IN-SITU COMPOSITES BASED ON BLENDS OF A THERMOTROPIC LIQUID-CRYSTALLINE POLYMER AND A THERMOPLASTIC ELASTOMER (Abstract Available)
Author(s): MACHIELS AGC; DENYS KFJ; VANDAM J; DEBOER AP
Corporate Source: DELFT UNIV TECHNOL,DEPT POLYMER TECHNOL/NL-2600GA DELFT//NETHERLANDS/; DELFT UNIV TECHNOL,DEPT POLYMER TECHNOL/NL-2600GA DELFT//NETHERLANDS/
Journal: POLYMER ENGINEERING AND SCIENCE, 1996, V36, N19 (OCT), P2451-2466
ISSN: 0032-3888
Language: ENGLISH Document Type: ARTICLE
Abstract: This paper describes the preparation and properties of in-situ composites based on polymers with no overlap in processing temperatures. The polymers used were Vectra A900, a thermotropic liquid crystalline copolyester (TLCP), and Arnitel em630, a thermoplastic elastomer. Blends were generated by feeding the two components from separate extruders into a Ross static mixer. Different morphologies were obtained by varying the number of mixing elements of the static

mixer. Using 8 mixing elements **led** to a stratified morphology of Vectra layers in Arnitel, using 11 mixing elements resulted in the desired continuous fiber/matrix morphology whereas a pronounced skin-core morphology was obtained with 14 mixing elements. It is argued that in-situ composites can be generated by a distributive mixing process without the formation of an Intermediate droplet/matrix morphology as occurs in common dispersive blending equipment. Tensile modulus and strength of all blends increased with extrudate draw ratio as a result of increased molecular orientation of the TLCP phase. The level of reinforcement, however, was lower than expected, probably due to the low temperature of drawing. Annealing and capillary instability experiments showed that above the melting point of the TLCP the fiber/matrix morphology rapidly breaks up into a droplet/matrix morphology. This process takes just a few seconds for fibers of thickness similar to 1 mu m. It is shown to be the probable cause of the skin-core morphology obtained in case of 14 mixing elements.

43/3,AB/19 (Item 11 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04903251 Genuine Article#: UQ661 Number of References: 30
Title: TOUGHENING OF AROMATIC DIAMINE-CURED EPOXY-RESINS BY POLY(BUTYLENE PHTHALATE)S AND THE RELATED COPOLYESTERS (Abstract Available)
Author(s): IIJIMA T; MIURA S; FUJIMAKI M; TAGUCHI T; FUKUDA W; TOMOI M
Corporate Source: YOKOHAMA NATL UNIV,FAC ENGN,DEPT APPL CHEM,HODOGAYA KU,TOKIWADAI 156/YOKOHAMA/KANAGAWA 240/JAPAN/
Journal: JOURNAL OF APPLIED POLYMER SCIENCE, 1996, V61, N1 (JUL 5), P 163-175
ISSN: 0021-8995
Language: ENGLISH Document Type: ARTICLE
Abstract: Aromatic polyesters, prepared by the reaction of aromatic dicarboxylic acids and 1,4-butanediol, were used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with p,p'-diaminodiphenyl sulfone. These polyesters contained poly(butylene phthalate)s (PBP), poly(butylene phthalate-co-butylene isophthalate)s, poly(butylene phthalate-co-butylene terephthalate)s, and poly(butylene phthalate-co-butylene 2,6-naphthalene di-carboxylate)s. All aromatic polyesters used in this study were soluble in the epoxy resin without solvents and were found to be effective as modifiers for toughening the cured epoxy resin. For example, the inclusion of 20 wt % PBP (MW 16,300) **led** to a 120% increase in the fracture toughness (K-IC) of the cured resin with no loss of mechanical and thermal properties. The toughening mechanism was discussed in terms of the morphological and dynamic viscoelastic behaviors of the modified epoxy resin system. (C) 1996 John Wiley & Sons, Inc.

43/3,AB/20 (Item 12 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04642332 Genuine Article#: TY830 Number of References: 51
Title: STUDY ON THE TERNARY BLENDS OF POLYPHENYLENESULFIDE, POLYSULFONE, AND LIQUID-CRYSTALLINE POLYESTERAMIDE (Abstract Available)
Author(s): KIM BC; HONG SM; HWANG SS; KIM KU
Corporate Source: KOREA ADV INST SCI & TECHNOL,DIV POLYMER RES/SEOUL 130650//SOUTH KOREA/
Journal: POLYMER ENGINEERING AND SCIENCE, 1996, V36, N4 (FEB), P574-582
ISSN: 0032-3888

Language: ENGLISH Document Type: ARTICLE
Abstract: Ternary blends of poly(p-phenylenesulfide) (PPS), thermotropic liquid crystalline polyesteramide (LCP), and polysulfone (PSF) were investigated in terms of processing characteristics, blend morphology, and physical properties. In the incompatible PPS/LCP blends, LCP imparted a nucleating effect to the crystallization of PPS. Up to 10wt% LCP content, the tensile properties of PPS/LCP blends were enhanced with increasing LCP content, but they deteriorated if the LCP content exceeded 20wt%. Addition of a third component, PSF, to the 90/10 PPS/LCP blend promoted development of rodlike or threadlike fibrillar structure and orientation of the deformed LCP domains, which **led** to improvement of tensile strength up to 20%.

43/3,AB/21 (Item 13 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04156058 Genuine Article#: RJ254 Number of References: 31
Title: TOUGHENING OF AROMATIC DIAMINE-CURED EPOXY-RESINS BY MODIFICATION WITH N-PHENYLMALEIMIDE-STYRENE-P-HYDROXYSTYRENE TERPOLYMERS (Abstract Available)
Author(s): IIJIMA T; SUZUKI N; FUKUDA W; TOMOI M
Corporate Source: YOKOHAMA NATL UNIV,FAC EDUC,DEPT APPL CHEM,HODOGAYA KU,TOKIWADAI 156/YOKOHAMA/KANAGAWA 240/JAPAN/
Journal: EUROPEAN POLYMER JOURNAL, 1995, V31, N8 (AUG), P775-783
ISSN: 0014-3057
Language: ENGLISH Document Type: ARTICLE
Abstract: N-phenylmaleimide-styrene-p-hydroxystyrene terpolymers (PMSH), containing pendant p-hydroxyphenyl groups as functionalities, were prepared and used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with p,p'-diaminodiphenyl sulphone. The terpolymers were effective as modifiers for toughening the epoxy resin. When using more than 10 wt% of PMSH with <3.0 mol.% p-hydroxystyrene (HSt) units, the fracture toughness (K-IC) for the modified resins increased > 100% with a medium loss of flexural strength and with a retention in flexural modulus and the glass transition temperature. For example, inclusion of 12.5 wt% of PMSH (1.0 mol.% HSt unit, M(w) 291,000) **led** to a 130% increase in K-IC. The most effective modification for the modified reins could be attained because of the co-continuous structure of the modified resins. The toughening mechanism is discussed in terms of the morphological behaviors of the modified expoxy resin systems.

43/3,AB/22 (Item 14 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04052191 Genuine Article#: QK711 Number of References: 26
Title: TOUGHENING OF AROMATIC DIAMINE-CURED EPOXY-RESINS BY POLY(ETHYLENE PHTHALATE)S AND THE RELATED COPOLYESTERS (Abstract Available)
Author(s): IIJIMA T; ARAI N; FUKUDA W; TOMOI M
Corporate Source: YOKOHAMA NATL UNIV,FAC ENGN,DEPT APPL CHEM,HODIGAYA KU,156 TOKIWADAI/YOKOHAMA/KANAGAWA 240/JAPAN/
Journal: EUROPEAN POLYMER JOURNAL, 1995, V31, N3 (MAR), P275-284
ISSN: 0014-3057
Language: ENGLISH Document Type: ARTICLE
Abstract: Aromatic polyesters, prepared by the reaction of aromatic dicarboxylic acids and 1,2-ethanediol, were used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with

p,p'-diaminodiphenyl sulphone. These polyesters contained poly(ethylene phthalate)s, poly(ethylene phthalate-co-ethylene isophthalate)s (PEPI), poly(ethylene phthalate-co-ethylene terephthalate)s, and poly (ethylene phthalate-co-ethylene 2,6-naphthalene dicarboxylate)s. Ail the aromatic polyesters used in this study were soluble in the epoxy resin without solvents and were found to be effective as modifiers for toughening the epoxy resin. For example, the inclusion of 20 wt% of PEPI (10 mol.% isophthalate unit, MW 7400) **led** to a 100% increase in the fracture toughness (K-IC) of the cured resin with no loss of mechanical and thermal properties. The modified resins had a two-phase morphology and the polyester-rich dispersed particles in the epoxy matrix. The toughening mechanism was discussed in terms of the morphological and dynamic viscoelastic behaviours of the modified epoxy resin system.

43/3,AB/23 (Item 15 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02578153 Genuine Article#: LM313 Number of References: 25
Title: EFFECT OF CROSS-LINK DENSITY ON MODIFICATION OF EPOXY-RESINS BY N-PHENYLMALEIMIDE STYRENE COPOLYMERS (Abstract Available)
Author(s): IIJIMA T; MIURA S; FUKUDA W; TOMOI M
Corporate Source: YOKOHAMA NATL UNIV,FAC ENGN,DEPT APPL CHEM,TOKIWADAI 156,HODOGAYA KU/YOKOHAMA/KANAGAWA 240/JAPAN/
Journal: EUROPEAN POLYMER JOURNAL, 1993, V29, N8 (AUG), P1103-1113
ISSN: 0014-3057
Language: ENGLISH Document Type: ARTICLE
Abstract: The effect of cross-link density on the toughening of modified resins was investigated for the modification of epoxy resins with N-phenylmaleimide-styrene alternating copolymers (PMS). The cross-link density of the epoxy matrix was controlled by a combination of two kinds of epoxy resins [diglycidyl ether of bisphenol-A (DGEBA) or triglycidyl aminocresol (TGAC)] and hybrid hardeners composed of p,p'-diaminodiphenyl sulphone (DDS) and p,p'-(N,N'-dimethyl)-diaminodiphenyl sulphone (MDS). The addition of 10 wt% of PMS (M(w)BAR 214,000) **led** to 120% increase in the fracture toughness (K(IC)) of the DGEBA resin cured with the hybrid hardener (DDS: MDS, 67: 33 mol ratio). On addition of 15 wt% of PMS (M(w)BAR 214,000), K(IC) for the modified resin increased 110% in the TGAC/hybrid hardener (DDS: MDS, 67: 33 mol ratio) system. Morphologies of the modified resins depended on PMS molecular weight and concentration, and the cross-link density of the matrix. The toughening of epoxies could be explained by the cocontinuous phase structure in every case.

43/3,AB/24 (Item 16 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02460004 Genuine Article#: LD219 Number of References: 24
Title: TOUGHENING OF EPOXY-RESINS BY N-PHENYLMALEIMIDE-N-CYCLOHEXYLMALEIMIDE STYRENE TERPOLYMERS (Abstract Available)
Author(s): IIJIMA T; SATO K; FUKUDA W; TOMOI M
Corporate Source: YOKOHAMA NATL UNIV,FAC ENGN,DEPT APPL CHEM,TOKIWADAI 156,HODOGAYA KU/YOKOHAMA/KANAGAWA 240/JAPAN/
Journal: JOURNAL OF APPLIED POLYMER SCIENCE, 1993, V48, N10 (JUN 10), P 1859-1868
ISSN: 0021-8995

Language: ENGLISH Document Type: ARTICLE
Abstract: N-Phenylmaleimide (PMI)-N-cyclohexylmaleimide (CMI)-styrene (St) terpolymers were used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with p,p'-diaminodiphenyl sulfone (DDS). The terpolymers were effective as modifiers for toughening of the epoxy resin system. The most suitable compositions for the modification of the epoxy resin were inclusion of 10 wt % of the terpolymer (45 mol % PMI, 5 mol % CMI, and 50 mol % St units) with M(w) higher than 247,000, which **led** to ca. a 140% increase in the fracture toughness (K(IC)) of the cured resin with a medium expense of mechanical properties. The glass transition temperatures of the modified resins were equal to or higher than that of the parent epoxy resin. The morphologies of the modified resins were dependent on the terpolymer molecular weight and concentration. On addition of 5 wt % of the terpolymer (M(w) 400,000), the modified resins had two-phase morphologies and the terpolymer-rich dispersed particles in the epoxy matrix. On addition of more than 8 wt % of the terpolymer, the morphologies of the cured resins changed drastically and showed a tendency to form cocontinuous phases. The toughening mechanism was discussed in terms of the morphological behaviors of the modified epoxy resin systems.

43/3,AB/25 (Item 17 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02106854 Genuine Article#: KB066 Number of References: 22
Title: TOUGHENING OF EPOXY-RESINS BY N-PHENYLMALEIMIDE STYRENE COPOLYMERS (Abstract Available)
Author(s): IIJIMA T; ARAI N; TAKEMATSU K; FUKUDA W; TOMOI M
Corporate Source: YOKOHAMA NATL UNIV,FAC ENGN,DEPT APPL CHEM,TOKIWADAI 156,HODOGAYA KU/YOKOHAMA/KANAGAWA 240/JAPAN/
Journal: EUROPEAN POLYMER JOURNAL, 1992, V28, N12 (DEC), P1539-1545
ISSN: 0014-3057
Language: ENGLISH Document Type: ARTICLE
Abstract: N-Phenylmaleimide (PMI)-styrene (St) alternating copolymers were used to improve the toughness of bisphenol-A diglycidyl ether epoxy resin cured with pp'-diaminodiphenyl sulphone (DDS). The most suitable composition for the modification was inclusion of 10 wt% of the copolymer (M(w)BAR 345,000) which **led** to a 130% increase in the fracture toughness (K(IC)) of the cured resin with a medium decrease of its mechanical properties. The glass transition temperatures of the modified resins were equal to or higher than that of the parent epoxy resin. The morphologies of the modified resins were dependent on the copolymer molecular weight and concentration. On addition of up to 7 wt% of the copolymer (M(w)BAR) 345,000) the modified resins had two-phase morphologies with the copolymer-rich dispersed particles in the epoxy matrix. On addition of 8 wt% of the copolymer, the morphologies of the cured resins changed drastically and showed a tendency to form co-continuous phases. The toughening mechanism is discussed in terms of the morphological characteristics of the modified epoxy resin systems.

43/3,AB/26 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04867644 JICST ACCESSION NUMBER: 01A0189796 FILE SEGMENT: JICST-E
Polyarylates Containing Sulfone Ether Linkages.

02/03/2003

HSIAO S-H (1); CHIOU J-H (1)
(1) Tatung Univ., Taipei, Twn
Polym J, 2001, VOL.33,NO.1, PAGE.95-101, FIG.4, TBL.4, REF.17
JOURNAL NUMBER: F0612AAI ISSN NO: 0032-3896 CODEN: POLJB
UNIVERSAL DECIMAL CLASSIFICATION: 542.952.6:542.953
LANGUAGE: English COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: A series of polyarylates containing sulfone or both of ether and sulfone groups were synthesized from diacid chlorides such as 4,4'-sulfonyldibenzoyl chloride (SDBC), 4,4'- sulfonylbis(1,4-phenylene)dioxyldibenzoyl chloride (SODBC), and 4,4'- sulfonylbis(2,6-dimethyl-1,4-phenylene)dioxy!dibenzoyl chloride (4MeSODBC) with various bisphenols by the interfacial polycondensation technique. Moderate to high molecular weight polyarylates with inherent viscosity up to 1.22 dL g-1 were obtained. Most of them were soluble in various organic solvents and afforded transparent, flexible, and tough films by solution casting. Two polyarylates based on SDBC exhibited a moderate level of crystallinity and poor solubility; however, the introduction of ether linkages into the polymer backbone caused a decreased crystallinity and an enhanced solubility. The incorporation of ether groups in the sulfonyl polyarylate main chain **led** to a decreased glass transition temperature (Tg) or softening temperature (TS). The methyl-substituted poly(ether-sulfonearylate)s from 4MeSODBC reveal higher Tg or Ts but lower decomposition temperatures than the corresponding non-substituted analogs from SODBC. (author abst.)

43/3,AB/27 (Item 2 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04612637 JICST ACCESSION NUMBER: 99A0809443 FILE SEGMENT: JICST-E
Properties of Organic **EL** Devices Having a Polymer Buffer Layer.
KIDO JUNJI (1); THANH D (1); LUAN K (1); SUZUKI TAKAYUKI (1)
(1) Yamagata Univ., Grad. Sch.
Kobunshi Gakkai Yokoshu(Polymer Preprints, Japan), 1999, VOL.48,NO.3, PAGE.424, FIG.1
JOURNAL NUMBER: Z0703BAU
UNIVERSAL DECIMAL CLASSIFICATION: 621.383:535.35 535.376:547 544.23-16:535/538
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication

43/3,AB/28 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04484232 JICST ACCESSION NUMBER: 00A0134892 FILE SEGMENT: JICST-E
Perspective on Japanese plastics industry in 2000. **Polyethersulfone**.

NOMURA HIDEO (1)
(1) Sumitomo Chem. Co., Ltd.
Purasuchikkusu(Japan Plastics), 2000, VOL.51,NO.1, PAGE.99-102, FIG.4, TBL.3
JOURNAL NUMBER: F0254AAI ISSN NO: 0555-7887 CODEN: PRSKA
UNIVERSAL DECIMAL CLASSIFICATION: 678.644 678

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: This paper explains the titled item from the following viewpoints: 1) Demand trends (demand prediction in Japan and the world), 2) features of **polyethersulfone** (heat resistance, mechanical properties, flow characteristics, dimensional stability, transparency, combustion characteristics and food safety), 3) technological development trends (application as heat resistant coating material and recent needs of "5003P", with OH groups rich at polymer end by ICI Co., features, applications and recent needs of "7600P", high MW grade and applications of self sliding grades), 4) applications (electronics parts, OA and AV equipment, films for **LCD** substrates, electric machinery and coating) and 5) future problems and development (development responsive to market needs).

43/3,AB/29 (Item 4 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04072206 JICST ACCESSION NUMBER: 99A0500550 FILE SEGMENT: JICST-E
Plastic used in electronics industry (2). Materials. Polyethersulfon and applications.
NOMURA HIDEO (1)
(1) Sumitomo Chem. Co., Ltd.
Purasuchikkusu(Japan Plastics), 1999, bessatsu (4gatsu), PAGE.77-80, FIG.4, TBL.3
JOURNAL NUMBER: F0254AAI ISSN NO: 0555-7887 CODEN: PRSKA
UNIVERSAL DECIMAL CLASSIFICATION: 678.5/.8 671.315.616
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: This paper introduces the titled technological trends : 1) Features of "Sumicaexcell" ; heat resistance, mechanical properties, flow characteristics, dimensional stability, transparency, combustion characteristics, food safety, 2) technical development trends ; terminal OH groups, high MW grads, sliding types, 3) applications ; electronics parts, OA/AV equipment, films for **LCD** substrates, coating and 4) future problems and prospects (improved quality and material development responsive to market needs).

43/3,AB/30 (Item 5 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04052499 JICST ACCESSION NUMBER: 99A0460493 FILE SEGMENT: JICST-E
Newest plastics technology. Technlological trends in "Sumica Exel PES".
NOMURA HIDEO (1)
(1) Sumitomo Chem. Co., Ltd.
JETI, 1999, VOL.47,NO.4, PAGE.102-104, FIG.1, TBL.2
JOURNAL NUMBER: F0013BAY ISSN NO: 0289-4343
UNIVERSAL DECIMAL CLASSIFICATION: 678.5/.8
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: This paper introduces the titled PES product manufactured by

Sumitomo Chem. Ind. Co., Ltd licensed from ICI Co., Ltd. : 1) Features ; heat resistance, flow characteristics, dimensional stability, transparency, combustion characteristics and food hygiene, 2) technical development movement ; endowment of end OH groups to enhance crosslink density after firing, high MW grades with superior separation performance and slide grades and 3) applications ; electronics parts, OA and AV equipment parts, films for **LC display** substrates and coating.

43/3,AB/31 (Item 6 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03972847 JICST ACCESSION NUMBER: 99A0196342 FILE SEGMENT: JICST-E
Organic **EL** element using polymeric material as anode buffer layer.
OGATA TOMOYUKI (1); SATO YOSHIHARU (1); KIDO JUNJI (2); SUZUKI TAKAYUKI (2)
(1) Mitsubishikagaku Hikarijohoken; (2) Yamagata Univ., Grad. Sch.
Porima Zairyo Foramu Koen Yoshishu, 1998, VOL.7th, PAGE.389-390, FIG.2, REF.2
JOURNAL NUMBER: L2062AAZ
UNIVERSAL DECIMAL CLASSIFICATION: 621.383:535.35
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication

43/3,AB/32 (Item 7 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03972835 JICST ACCESSION NUMBER: 99A0196330 FILE SEGMENT: JICST-E
Liquid crystal display device with polymer film as substrate
KANEMOTO AKIHIKO (1)
(1) Ricoh Co., Ltd., Res. Inst. of Gen. Electron.
Porima Zairyo Foramu Koen Yoshishu, 1998, VOL.7th, PAGE.365-366, FIG.3, TBL.1, REF.2
JOURNAL NUMBER: L2062AAZ
UNIVERSAL DECIMAL CLASSIFICATION: 621.385:621.397
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication

43/3,AB/33 (Item 8 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03948365 JICST ACCESSION NUMBER: 99A0189915 FILE SEGMENT: JICST-E
Material development for film **liquid crystal display**.
MIZUNO MASUO (1)
(1) Sumitomo Bakelite Co., Ltd., Fundam. Res. Lab.
Porima Zairyo Foramu Koen Yoshishu, 1997, VOL.6th, PAGE.1-4, FIG.7, TBL.1, REF.5
JOURNAL NUMBER: L2062AAZ
UNIVERSAL DECIMAL CLASSIFICATION: 621.385:621.397
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding

02/03/2003

ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication

43/3,AB/34 (Item 9 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03160995 JICST ACCESSION NUMBER: 97A0395085 FILE SEGMENT: JICST-E
Polyethersulfone, PES.
Purasuchikkusu(Japan Plastics), 1997, VOL.48,NO.4, PAGE.64-65, FIG.8, TBL.1
JOURNAL NUMBER: F0254AAI ISSN NO: 0555-7887 CODEN: PRSKA
UNIVERSAL DECIMAL CLASSIFICATION: 678.5/.8
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: This paper explains features and applications of the titled plastics obtained by polycondensation of dichloro diphenyl sulfone as the main component. The following features are explained : Amorphous, transparent amber color, superior heat resistance, UL temperature ratings of mechanical and electrical properties of standard grades are both 180.DEG.C., Tg of 220.DEG.C., superior chemical resistance as an amorphous plastic and hot water and steam resistnce. Applications include celectric/electronics fields such as relays, switches and **LCD** substrates, automotive parts such as engine insulators and membranes for ultra pure water and artificial hemodialysis.

43/3,AB/35 (Item 10 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02808744 JICST ACCESSION NUMBER: 96A0566380 FILE SEGMENT: JICST-E
Film liquid crystal.
Kino Zairyo(Function & Materials), 1996, VOL.16,NO.7, PAGE.62-65, FIG.3, TBL.4
JOURNAL NUMBER: Y0021AAV ISSN NO: 0286-4835
UNIVERSAL DECIMAL CLASSIFICATION: 621.385:621.397
LANGUAGE: English COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: This paper describes the technlological trend of film **LCD** of polymer substrates put to practical use in an electornic notebook and a portable telephone. Demand characteristics for a base film, and problems and countermeasures upon the conversion of the display format from a TN system to a STN system are enumerated. End products in which film **LCD** is adopted as of 1996 and those in which the adoption is expected in future are enumerated.

43/3,AB/36 (Item 11 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02229093 JICST ACCESSION NUMBER: 94A0491960 FILE SEGMENT: JICST-E
Optical design of simple matrix ST **LCD**.
MURAYAMA AKIO (1); SHOJI MASATO (1); KONDO SUSUMU (1); HASEGAWA MAKOTO (1)
(1) Toshiba Disupureidebaisugiken
Porima Zairyo Foramu Koen Yoshishu, 1993, VOL.2nd, PAGE.267-268, FIG.3,

TBL.1
JOURNAL NUMBER: L2062AAZ
UNIVERSAL DECIMAL CLASSIFICATION: 678.01:53 621.385:621.397
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication
ABSTRACT: Polyarylate (PA) and **polyethersulfone** (PES) were examined as an optical compensation film for fast response super twist (ST) **LCD**.Wavelength dispersion of retardation of PA did not agree with wavelength dispersion of n of high n necessary for fast response of STLCD, and wavelength dispersion of retardation of PES agreed fairly well. A possibility of PES to high contrast display was confirmed.

43/3,AB/37 (Item 12 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02176743 JICST ACCESSION NUMBER: 95A1037061 FILE SEGMENT: PreJICST-E
The organic **EL** device with TPD dispersed **polyethersulfone** polymer as a hole transport material.
UEMURA TAKU (1); KIMURA HIROYA (1); OKUDA NOBUYUKI (1); UEBA YOSHINOBU (1)
(1) Sumitomo Electr. Ind., Ltd., R & D Group
Oyo Butsuri Gakkai Gakujutsu Koenkai Koen Yokoshu, 1995, VOL.56th,NO.3, PAGE.1029
JOURNAL NUMBER: Y0055AAA
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
MEDIA TYPE: Printed Publication

43/3,AB/38 (Item 13 from file: 94)
DIALOG(R)File 94:JICST-EPlus

01022311 JICST ACCESSION NUMBER: 90A0057332 FILE SEGMENT: JICST-E
Reaction of polymer film on irradiation with excimer lasers. (4). Alignment of liquid crystal on **polyethersulfone** film ablated by XeCl excimer laser.
NIINO HIROYUKI (1); KAWABATA YASUJIRO (1); YABE AKIRA (1)
(1) National Chemical Lab. for Industry
Kobunshi Gakkai Yokoshu(Polymer Preprints, Japan), 1989, VOL.38,NO.7, PAGE.2160-2162, FIG.2, REF.4
JOURNAL NUMBER: Z0703BAU
UNIVERSAL DECIMAL CLASSIFICATION: 544.23-14.03/.04 544.25
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication

43/3,AB/39 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

14175420 PASCAL No.: 99-0374004
Application of surface modifying macromolecules in **polyethersulfone** membranes : Influence on PES surface chemistry and physical properties
VU ANH PHAM; SANTERRE J P; MATSUURA T; NARBAITZ R M
Department of Biomaterials, Faculty of Dentistry, 124 Edward St.,

02/03/2003

University of Toronto, ON, M5G 1G6, Canada; Industrial Membrane Research Institute, Department of Chemical Engineering, University of Ottawa, Ottawa, ON, K1N 6N5, Canada; Department of Civil Engineering, University of Ottawa, Ontario, K1N 6N5, Canada

Journal: Journal of applied polymer science, 1999, 73 (8) 1363-1378

Language: English

Novel surface modifying macromolecules (SMMs) were developed for incorporation into **polyethersulfone** (PES) membranes, intended for pervaporation applications. These materials were synthesized with a diisocyanate, polypropylene oxide (PPO), and a fluoro-alcohol, and characterized for elemental analysis, molecular weight, and glass transition temperatures. PES/SMM blends with eight types of SMMs were characterized for surface and physical properties and compared with PES. Water droplet contact angle measurements and X-ray photoelectron spectroscopy data showed that the SMMs migrated to the surface and rendered the PES material more hydrophobic. While advancing contact angle data were equivalent to those of pure Teflon, the highest average values of receding angles of these systems were less than those of commercial Teflon. The opaqueness of PES/SMMs films and data from differential scanning calorimetry experiments showed that the SMMs were either immiscible or only partially miscible with PES. It was also observed, for a fixed PES concentration of 25 wt %, that increases in the molecular weight of the SMMs and the weight fraction of PPO in the SMMs **led** to phase separation in the ternary PES/SMMs/dimethylacetamide (i.e., membrane casting solution) system. On the other hand, in the binary PES/SMMs system (i.e., cast membrane film), an increasing weight fraction of fluorine in the SMMs contributed to an increase in the phase separation.

FILE 'WPIX, JAPIO'

L1 323548 S TRANSISTOR OR TFT

L2 27838 S ELECTROLUMINESCENCE OR EL OR LED OR LASER(W) DIODE OR EL(W) DISPLAY

L3 156180 S (U14-K01 OR W03-A08B OR W04-M01D3A OR T04-H03C2)/MC OR LCD OR LC(W) DISPLAY? OR LIQUID(W) CRYSTAL(W) DISPLAY?

L4 46090 S MOISTURE(W) PROOF OR AIRTIGHT OR WATERTIGHT

L5 1816 S POLYETHER(W) SULFONE OR POLYETHERSULFONE

L6 2160 S POLYETHYLENE(W) TEREPHTHALATE(W) RESIN

L7 0 S ARTON(1N) RESIN

L8 1137692 S RESIN

L9 45955 S POLYIMIDE

L10 264 S TEFLON(W) RESIN

L11 508991 S SILICON OR SI

L12 31443 S GERMANIUM OR GE

L13 1876153 S METAL#### OR ALLOY? OR AMALGAM? OR INGOT? OR BULLION?

L14 1335 S PIXEL(W) ARRAY

L15 66879 S GLASS(N)(SUBSTRAT? OR SURFACE? OR BASE# OR SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR PANE?)

L16 253941 S (ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR GLUE? OR PASTE? OR HOLD?)(2N)(LAYER? OR FILM? OR COAT?)

L17 24111 S (GLASS? OR VITR? OR HYAL? OR CULLET? OR (NON(W) CRYST? OR NONCRYST? OR AMORPH?)(2A) SOLID?)(N)(LAYER? OR COAT? OR FILM?)

L18 488457 S ((L1 OR L2 OR L3))

L19 608 S L18 AND L4

L20 24 S L19 AND (ALUMINUM OR ALUMINIUM OR AL)

L21 20 S L19 AND PLASTIC

L22 6 S L19 AND (L5 OR L6 OR L9)

L23 75 S L19 AND L8

L24 8 S L23 AND (L11 OR L12)

L25 4 S L23 AND L15

L26 6 S L23 AND L16

L27 1 S L23 AND L17

L28 124 S L18 AND L5

L29 18 S L18 AND L6

L30 3070 S L18 AND L9

L31	1 S	L18 AND L10
L32	7 S	L28 AND L15
L33	12 S	L28 AND L16
L34	4 S	L28 AND L17
L35	0 S	L30 AND L6
L36	1 S	L30 AND L10
L37	499 S	L30 AND L15
L38	27 S	L37 AND L16
L39	0 S	L37 AND L14
L40	10 S	L37 AND L17
L41	0 S	(L28 OR L30) AND L14 AND L13
L42	91 S	L20 OR L22 OR ((L24 OR L25 OR L26 OR L27)) OR L29 OR ((L31 OR L32 OR L33 OR L34 OR L35 OR L36)) OR L40
L43	46 S	(L21 OR L38) NOT (L20 OR L22 OR ((L24 OR L25 OR L26 OR L27)) OR L29 OR ((L31 OR L32 OR L33 OR L34 OR L35 OR L36)) OR L40)

L42 ANSWER 1 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-747748 [81] WPIX
DNN N2002-589619 DNC C2002-211857
TI Substrate holding structure for **liquid crystal display**, has electroconductive element for power supply connected to ceramic base material through opening of cooling element which are supported by supporting element.
DC L03 U11 U14 X25
PA (SUME) SUMITOMO ELECTRIC IND CO
CYC 1
PI JP 2002313899 A 20021025 (200281)* 15p
ADT JP 2002313899 A JP 2001-112989 20010411
PRAI JP 2001-112989 20010411
AB JP2002313899 A UPAB: 20030121
NOVELTY - An electroconductive element for power supply is connected to a ceramic base material (5) containing **aluminum** nitride through opening of a cooling element (6). An **airtight** sealing element has edges connected to opening of the cooling element and a side wall of a chamber (2). A supporting element (11) supports the ceramic base material and the cooling element.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for substrate processing apparatus.
USE - For semiconductor fabrication machines, **liquid crystal display**.
ADVANTAGE - Obtains inexpensive substrate holding structure and substrate processing apparatus as ceramic base material is made into simple structure. Thus process efficiency can be improved.
DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional model of the substrate processing apparatus.
Chamber 2
Ceramic base material 5
Cooling element 6
Supporting element 11
Dwg.1/7

L42 ANSWER 2 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-568567 [61] WPIX
DNN N2002-450155 DNC C2002-161317
TI High polymer film sheet for optical purposes such as substrate for **liquid crystal display**, consists of thermoplastic high polymer film sheet with specified glass transition temperature and predetermined low variation rate of dimension.
DC A89 L03 P81 U14
PA (SUMB) SUMITOMO BAKELITE CO LTD
CYC 1
PI JP 2001348436 A 20011218 (200261)* 4p
ADT JP 2001348436 A JP 2000-168017 20000605
PRAI JP 2000-168017 20000605
AB JP2001348436 A UPAB: 20020924
NOVELTY - High polymer film sheet is a thermoplastic high polymer film sheet with an optional coated **layer**. **Glass** transition temperature of the polymer is 100 deg. C or more. After drying for 2 hours or more at a temperature more than 100 deg. C and less than glass transition temperature, the variation rate of dimension of the film sheet after leaving 1-8 hours at 50% humidity atmosphere at 23 deg. C, is less than 0.005%.
USE - For optical purposes, especially as substrate for **liquid crystal display** (**LCD**) production.
ADVANTAGE - A stable substrate for **liquid crystal**

display is obtained from high polymer film sheet. The high polymer film sheet has favorable, very low dimensional variation under various process conditions.
Dwg.0/0

L42 ANSWER 3 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-420380 [45] WPIX
DNN N2002-330687 DNC C2002-119206
TI Photosetting resin sheet manufacture involves providing molding films having specific roughness, to inner faces of pair of rectangular flat dies.
DC A32 A89 L03 U11
PA (MITU) MITSUBISHI CHEM CORP
CYC 1
PI JP 2002052552 A 20020219 (200245)* 8p
ADT JP 2002052552 A JP 2000-244060 20000811
PRAI JP 2000-244060 20000811
AB JP2002052552 A UPAB: 20020717
NOVELTY - A photoresist is injected into a molding cavity (5), including a pair of mutually opposite rectangular flat dies (2a,2b). The inner face of the dies are provided with respective molding films (4a,4b) having a surface roughness Ra of 20nm or less. The film consists of **polyethylene terephthalate resin.**
USE - For manufacturing photosetting resin sheet used as substrates for optical disk, solar panels, especially used as double refraction optical element for **LCD** panels, organic **EL** **display** panels, touch panels, etc.
ADVANTAGE - Enables easy molding of photosetting resin sheet for a large product, without damage. Provides resin sheet with smooth surface.
DESCRIPTION OF DRAWING(S) - The figure shows a partial perspective diagram of shaping die.
Flat dies 2a,2b
Molding films 4b,4b
Molding cavity 5
Dwg.1/1

L42 ANSWER 4 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-419498 [45] WPIX
CR 2002-307650 [35]; 2002-386063 [42]; 2002-408559 [44]
DNN N2002-329948 DNC C2002-118522
TI Hard-coat film for cathode-ray tubes and **liquid crystal** **display** device, consists of polyester film base having preset surface elasticity, provided with active energy-beam polymerizable resin layer.
DC A23 A82 A85 G02 P42 P73 P81 T04 U14 U21 V05
PA (FUJF) FUJI PHOTO FILM CO LTD
CYC 1
PI JP 2001323087 A 20011120 (200245)* 10p
ADT JP 2001323087 A JP 2001-61667 20010306
PRAI JP 2000-72443 20000310
AB JP2001323087 A UPAB: 20020717
NOVELTY - Hard-coat film consists of transparent base laminated with active energy-beam polymerizable resin layer, on side(s). The transparent base is polyester film having surface elasticity rate of 5-15 GPa on at least one side.
USE - As surface protective film for touch panels such as cathode-ray tubes, **liquid crystal displays**, plasma display panels, fusion engineering device, electroluminescent devices, glass and domestic electrical appliances.
ADVANTAGE - The hard coat film excels in scratch resistance and surface hardness. The hard coat film resists hardness reduction of active

energy-beam polymerizable resin layer by deformation of transparent base.
DESCRIPTION OF DRAWING(S) - The figure shows the cross-section of hard coat film.
Transparent polyester support 1
Transparent polyester film 2
Active energy-beam hardenable layer 3
Dwg.1/1

L42 ANSWER 5 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-320677 [36] WPIX
DNN N2002-251214 DNC C2002-093167
TI Manufacture of macromolecular film sheet and its equipment and optical macrmolecular film sheet for transparent electrode substrate for **liquid crystal display** element.
DC A85 L03 P42 P81 U14
PA (SUMB) SUMITOMO BAKELITE CO LTD
CYC 1
PI JP 2001347220 A 20011218 (200236)* 5p
ADT JP 2001347220 A JP 2000-168019 20000605
PRAI JP 2000-168019 20000605
AB JP2001347220 A UPAB: 20020610
NOVELTY - The manufacture of a macromolecular film sheet is new.
DETAILED DESCRIPTION - The manufacture comprises: (a) coating or laminating an ultraviolet ray curing resin composition on a macromolecular film sheet raw fabric; (b) irradiating the softened ultraviolet ray curing resin composition by keeping the composition into contact with an irregularly shaped roll; (c) transferring the resin composition to the irregular surface of the roll for molding.
USE - The method and the equipment are used for manufacturing the macromolecular film sheet for use in the optical macrmolecular film sheet. The optical macrmolecular film sheet is used for a transparent electrode substrate for a **liquid crystal display** element.
ADVANTAGE - Continuously molding fine irregularities on the macromolecular film sheet efficiently manufactures the optical macromolecular film sheet. The macromolecular film sheet has lightweight and less breakage compared with a **glass substrate**, and reduces manufacturing processes. Good display having no irregular display is available.
Dwg.0/1

L42 ANSWER 6 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-261055 [31] WPIX
CR 1997-039347 [04]
DNN N2002-202670 DNC C2002-077580
TI Optical film for **liquid crystal display**, outstanding in viewing angle property, uses light control plate coated with film containing photopolymerizable monomers or oligomers having different refractive indexes.
DC L03 P81 U14
PA (SUMO) SUMITOMO CHEM CO LTD
CYC 1
PI JP 2001228334 A 20010824 (200231)* 7p
ADT JP 2001228334 A Div ex JP 1995-102495 19950426, JP 2000-390660 19950426
PRAI JP 1995-102495 19950426; JP 2000-390660 19950426
AB JP2001228334 A UPAB: 20020516
NOVELTY - Optical film formed by laminating at least one light control plate (a) formed by UV irradiation of a film containing at least two photopolymerizable monomers and/or oligomers with different refractive indexes; at least one thermoplastic phase difference film (b) of polycarbonate, polysulfone, polyarylate, **polyether**

sulfone, polyester, polyvinyl alcohol or cellulose type resins with ratio (in-plane retardation)/(retardation in thickness direction) other than 0.5-1.8; and a polarization film.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is made for a **liquid crystal display** which has the film on the top and/or bottom side of a liquid crystal cell which has a positive dielectric anisotropy nematic liquid crystal layer with twist angle 60-120 deg. or 180-270 deg. between **glass substrates** with electrodes.

USE - In **liquid crystal displays** for portable TV and notebook-type personal computer..

ADVANTAGE - Display device has a wide viewing angle.

DESCRIPTION OF DRAWING(S) - UV lamp 1
Shading board 2
Conveyor 3
Polyethylene terephthalate film coated with composition for light-control plate 4
Irradiation angle 5
Dwg.1/4

L42 ANSWER 7 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-229779 [29] WPIX
DNN N2002-176747 DNC C2002-069860
TI **Polyimide** silicone **resin** for forming film on electronic components or semiconductor devices, is derived from diamine comprising diaminopolysiloxane and acid dianhydride, and exhibits preset properties.
DC A26 A85 L03 U11
IN KATO, H; SUGO, M
PA (SHIE) SHINETSU CHEM CO LTD; (SHIE) SHINETSU CHEM IND CO LTD; (KATO-I) KATO H; (SUGO-I) SUGO M
CYC 29
PI EP 1167423 A2 20020102 (200229)* EN 9p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
JP 2002012667 A 20020115 (200229) 7p
US 2002016408 A1 20020207 (200229)
KR 2002002306 A 20020109 (200246)
ADT EP 1167423 A2 EP 2001-115362 20010626; JP 2002012667 A JP 2000-196843 20000629; US 2002016408 A1 US 2001-892445 20010628; KR 2002002306 A KR 2001-38095 20010629
PRAI JP 2000-196843 20000629
AB EP 1167423 A UPAB: 20020508
NOVELTY - A **polyimide** silicone **resin**, is derived from a diamine comprising a diaminopolysiloxane and an acid dianhydride. The **resin** comprises at least 50 weight% (wt.%) of siloxane residual group, and has an elongation at rapture (sic) of 400% or higher, and a modulus of elasticity of 500 N/mm2 or less.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(i) a **polyimide** silicone **resin** solution composition comprising **polyimide** silicone **resin** and an organic solvent capable of dissolving the **resin**; and

(ii) a **polyimide** silicone **resin** film comprising **polyimide** silicone **resin** formed on a substrate.

USE - The method is used for forming **polyimide** silicone **resin** film such as electrode protective film or **moisture proof** protective film on electronic component parts, **liquid crystal display** panels or semiconductor devices. The method is used for forming electrode protective film for thin film **transistor** (**TFT**) **liquid crystal**

display panels, super twisted nematic (STN) **liquid crystal display** panels or plasma display panels, as junction films for integrated circuits and as conformal coating of printed circuit boards.

ADVANTAGE - The silicone **resin** forms films at relatively low temperature, has superior adhesiveness to the substrate, durability under conditions of high humidity, and low stress and high elongation. The solution composition forms **resin** film with ease. The **resin** film obtained from the **resin** composition, causes neither warpage nor copper sheet corrosion when applied on glass sheets or copper sheets.

Dwg.0/0

L42 ANSWER 8 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-208033 [27] WPIX
DNN N2002-158645 DNC C2002-063655
TI Film for **liquid crystal display** device, comprises thermoplastic resin having specified transition glass temperature, enthalpy relaxation temperature, and enthalpy relaxation magnitude.
DC A32 A85 L03 P73 P81 U14
IN HARADA, Y; OKAZAKI, I; TSUNASHIMA, K
PA (TORA) TORAY IND INC; (HARA-I) HARADA Y; (OKAZ-I) OKAZAKI I; (TSUN-I) TSUNASHIMA K
CYC 30
PI EP 1170323 A2 20020109 (200227)* EN 19p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2002018883 A1 20020214 (200227)
CN 1330098 A 20020109 (200229)
JP 2002080614 A 20020319 (200235) 8p
KR 2002003517 A 20020112 (200247)
ADT EP 1170323 A2 EP 2001-305797 20010704; US 2002018883 A1 US 2001-886988 20010625; CN 1330098 A CN 2001-117568 20010703; JP 2002080614 A JP 2001-134913 20010502; KR 2002003517 A KR 2001-39710 20010704
PRAI JP 2000-203338 20000705
AB EP 1170323 A UPAB: 20020429
NOVELTY - A thermoplastic resin film comprises at least a thermoplastic resin A having a transition glass temperature of at least 150 deg. C, an enthalpy relaxation temperature of 140-200 deg. C, and enthalpy relaxation magnitude of 0.01-2 kJ/mol. The thermoplastic resin film has a thickness of at least 30 mu m and a retardation of at most 20 nm.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(A) an optical film comprising a thermoplastic resin film as substrate layer;

(B) a process for producing a thermoplastic resin film comprising laminating a layer B containing a thermoplastic resin B on a layer A containing a thermoplastic resin A by melt-extrusion, optionally casting the resulting laminate into a film and peeling off the layer B to yield a thermoplastic resin film;

(C) a laminate comprising the layer A and layer C containing sub-layers having thermal expansion coefficient lower than the thermal expansion coefficient of thermoplastic resin A of the layer A in which the layer C is laminated on the layer A in a manner that the sub-layers of layer C have decreasing thermal expansion coefficients with increasing distance from the layer A; and

(D) a process for preparing the laminate.

USE - The film is used as optical film. The optical film is used as substrate useful for, e.g. **liquid crystal display**, polarizer-protective films, touch-screen supports, or

polarizing plates. It can also be used as **liquid crystal display** device substrates for mobile phone display screens or personal computer display screens.

ADVANTAGE - The thermoplastic resin film has a good surface flatness, low retardation and satisfactory dimensional stability. The substrate of the **liquid crystal display** device has satisfactory optical isotropy, permits a transparent electrode to have a low resistance and has less curling.

Dwg.0/0

L42 ANSWER 9 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-195230 [25] WPIX
DNN N2002-148320 DNC C2002-060265
TI Reflector for **liquid crystal display** unit, comprises body formed of insulating resin, and conductive pattern that supplies electric power to light source.
DC L03 P81 Q71 U14 W05
IN KANEKO, H; NISHIYAMA, M; SATO, Y
PA (NIDE) NEC CORP; (KANE-I) KANEKO H; (NISH-I) NISHIYAMA M; (SATO-I) SATO Y
CYC 3
PI US 2002015124 A1 20020207 (200225)* 13p
JP 2002025327 A 20020125 (200225) 11p
KR 2002005474 A 20020117 (200250)
ADT US 2002015124 A1 US 2001-897909 20010705; JP 2002025327 A JP 2000-205007 20000706; KR 2002005474 A KR 2001-40264 20010706
PRAI JP 2000-205007 20000706
AB US2002015124 A UPAB: 20020418

NOVELTY - A reflector (2) comprises a body formed of insulating resin; and a conductive pattern (31). The body comprises an outer and an inner surface defining a space open to an object to which a light is to be directed. The conductive pattern is printed on the outer surface of the body. It supplies an electric power to a light source (1) placed in the space.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(A) a **liquid crystal display** unit for producing an image comprising:

(a) a liquid crystal panel having an incident surface and an image producing surface;

(b) a driving circuit connected to the liquid crystal panel, that varies the transparency of a part of the liquid crystal panel, to transmit a light from the incident surface to the image producing surface through the part;

(c) a light source that illuminates the light incident surface with the light, comprising a lamp (10) having electrodes; a power supply cable having a conductive pattern and voltage application lines directly connected to electrode(s) and connected through the conductive pattern to the other electrodes (11, 12); and a reflector as above which is open to the optical path for directing the light to the optical path; and

(B) a process for producing a reflector comprising: (i) forming an insulating member from a first synthetic resin;

(ii) printing a conductive filler on a surface of the insulating member; and

(iii) solidifying the conductive filler on the surface to produce a conductive pattern.

USE - None given.

ADVANTAGE - The reflector has a conductive pattern that is thick enough to withstand thermal stress without enlargement of the **liquid crystal display** unit.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the structure of a light source in disassembled state.

Light source 1
Reflector 2
Lamp 10
Electrodes 11, 12
Conductive pattern 31
Dwg.7/13

L42 ANSWER 10 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-110052 [15] WPIX
DNN N2002-082047 DNC C2002-034282
TI Electroluminescent device for a flat panel display, has a sealant layer comprising a thermoplastic adhesive **resin** having a predetermined melt flow rate.
DC A89 U14 X26
PA (TOPP) TOPPAN PRINTING CO LTD
CYC 1
PI JP 2001307871 A 20011102 (200215)* 6p
ADT JP 2001307871 A JP 2000-120582 20000421
PRAI JP 2000-120582 20000421
AB JP2001307871 A UPAB: 20020306
NOVELTY - A transparent anode layer (2), a light-emission layer (3) and a cathode layer (4) are laminated sequentially on a transparent substrate (1). A **moisture-proof** film (5) which surmounts the layers, includes barrier and sealant layers. The sealant **layer** comprises thermoplastic **adhesive resin** with melt flow rate range of 5-20 g/10 minutes.
USE - For a flat panel display, e.g. cathode ray tube or **liquid crystal display**.
ADVANTAGE - Gap produced during lead electrode formation is suppressed completely by the **moisture-proof** layer, therefore reduction in tensile strength, stress cracking resistant property, workability are eliminated. Additional external moisture is eliminated, thus degradation in electroluminescent element characteristics is suppressed. Provision of **moisture-proof** film reduces weight and size of electroluminescent element.
DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the electroluminescent device. (Drawing includes non-English language text).
Transparent substrate 1
Transparent anode layer 2
Light-emission layer 3
Cathode layer 4
Moisture-proof film 5
Dwg.1/1

L42 ANSWER 11 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2002-074990 [10] WPIX
DNN N2002-055352 DNC C2002-022258
TI Light-directing arrangement for display apparatus, includes prismatic structure, transflective metal coating, and corrosion-resistant feature.
DC A89 L03 P81 U14
IN GARDNER, T J; GRIFFITH, R F; LINSE, L L; MEYER, L A; STEVENSON, J A
PA (MINN) 3M INNOVATIVE PROPERTIES CO
CYC 93
PI WO 2001075517 A1 20011011 (200210)* EN 40p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000066142 A 20011015 (200214)

ADT WO 2001075517 A1 WO 2000-US20720 20000728; AU 2000066142 A AU 2000-66142 20000728
FDT AU 2000066142 A Based on WO 200175517
PRAI US 2000-541203 20000403
AB WO 200175517 A UPAB: 20020213
NOVELTY - A light-directing arrangement comprises a prismatic structure having a first surface and a second surface including saw-tooth formations with tilted surfaces. A transflective metal coating is provided proximate to the saw-tooth formations. A corrosion-resistant feature is provided proximate to each of the metal coating and the prismatic structure to minimize effects of corrosion.

DETAILED DESCRIPTION - A light-directing arrangement comprises a prismatic structure (20) having first and second surfaces (21, 22), a transflective metal coating (30) and a corrosion-resistant feature (25). The prismatic structure is made from non-halogenated ultraviolet (UV)-polymerizable composition. The second surface has saw-tooth formations (24) having tilted surfaces (26). The transflective metal coating is provided proximate to the saw-tooth formations and has a visible-light transmission of at least 10%. The corrosion-resistant feature is proximate to each of the metal coating and the prismatic structure and provides a decrease of less than 5% in the sum of visible-light transmission and reflection.

INDEPENDENT CLAIMS are also included for the following:

(A) a display apparatus comprising a light-modulating layer, a polarizer, and a light-directing film; and

(B) the production of a transflector by providing a prismatic light-directing film, applying an intermediate metal coat layer, and applying a transflective silver coating having a visible-light transmission of at least 10%.

USE - For display apparatus, e.g. **liquid crystal displays**, used in electronic devices including portable computers, cellular phones, and digital watches.

ADVANTAGE - The light-directing arrangement is corrosion-resistant and directs an image to an angle different from a glare angle.

DESCRIPTION OF DRAWING(S) - The figure is an enlarged cross-sectional view of the light-directing arrangement.

Prismatic structure 20
First and second surfaces of prismatic structure 21, 22
Saw-tooth formations 24
Corrosion-resistant feature 25
Tilted surfaces 26
Transflective metal coating 30

Dwg.3/7

L42 ANSWER 12 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2001-613401 [71] WPIX
DNN N2001-457992 DNC C2001-183509
TI Electroluminescent marker for road sign, guide sign, bulletin board, has **moisture-proof** unit with transparent base films to seal electrode substrate, electroluminescent layer and transparent electrode.
DC A85 L03 Q41 U14
PA (VICO) VICTOR CO OF JAPAN
CYC 1
PI JP 2001185346 A 20010706 (200171)* 7p
ADT JP 2001185346 A JP 1999-367786 19991224
PRAI JP 1999-367786 19991224
AB JP2001185346 A UPAB: 20011203
NOVELTY - A transparent electrode (5) is provided on the **electroluminescence** (EL) layer (4) which is formed on an electrode substrate (2). A **moisture proof** unit (7) which is equipped with transparent base films such as PET and the moisture thin

film of silicon oxide or **aluminum** oxide, seals the electrode substrate, EL layer and the transparent electrode.

USE - Electroluminescent marker for road sign, guide sign, bulletin board, etc.

ADVANTAGE - Excels in moisture resistance, as **moisture proof** unit seals the electrode substrate, EL layer and the transparent electrode, thereby improving durability.

DESCRIPTION OF DRAWING(S) - The figure shows the cross-sectional view of electroluminescent device. (Drawing includes non-English language text).

Electrode substrate 2

Electroluminescence layer 4

Transparent electrode 5

Moisture proof unit 7

Dwg.1/6

L42 ANSWER 13 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2001-141508 [15] WPIX
DNN N2001-103364 DNC C2001-042023
TI Organic **electroluminescence** display has luminescent element covered airtightly by sealing board which has adhesive agent for absorbing water molecules in atmosphere.
DC A85 L03 U14
PA (NIDE) NEC CORP
CYC 1
PI JP 2000311782 A 20001107 (200115)* 7p
ADT JP 2000311782 A JP 1999-119030 19990427
PRAI JP 1999-119030 19990427
AB JP2000311782 A UPAB: 20010317

NOVELTY - A luminescent element (13) which is formed on a **glass substrate** (11) is covered by a sealing board (15), so that the luminescent element is not exposed to atmosphere. An adhesive agent comprising **resin** of heat cured type or photosetting type for absorbing the water molecules in the atmosphere is provided in the sealing board.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for organic electroluminescent display manufacturing method.

USE - Organic electroluminescent display with light emitting element durability improvement facility.

ADVANTAGE - As an adhesive agent is provided to absorb the water molecules, the durability of light emitting element is improved.

DESCRIPTION OF DRAWING(S) - The figure shows the organic electroluminescent display.

Glass substrate 11

Luminescent element 13

Sealing board 15

Dwg.1/7

L42 ANSWER 14 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2001-080178 [09] WPIX
CR 2000-499079 [44]; 2000-505765 [45]
DNN N2001-061116 DNC C2001-022932
TI Glass-plastic composite foil, for production of electronic components and optoelectronic equipment, e.g. displays, comprises a polymer-**coated glass** foil with low surface undulation and roughness.
DC A85 L01 L03 P73 U14 V04 W05
IN BUERKLE, R; DEUTSCHBEIN, S; MAUCH, R; SOSSENHEIMER, K; WEBER, A
PA (BURK-I) BURKLE R; (ZEIS) SCHOTT DISPLAY GLASS AG; (SCHO-N) SCHOTT DISPLAYGLAS GMBH; (ZEIS) SCHOTT GLAS; (ZEIS) ZEISS STIFTUNG CARL
CYC 88

PI WO 2000066507 A1 20001109 (200109)* DE 35p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000047484 A 20001117 (200111)
EP 1137607 A1 20011004 (200158) DE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
CN 1367766 A 20020904 (200281)
ADT WO 2000066507 A1 WO 2000-EP3471 20000417; AU 2000047484 A AU 2000-47484 20000417; EP 1137607 A1 EP 2000-929368 20000417, WO 2000-EP3471 20000417; CN 1367766 A CN 2000-802423 20000417
FDT AU 2000047484 A Based on WO 200066507; EP 1137607 A1 Based on WO 200066507
PRAI EP 1999-108440 19990430
AB WO 200066507 A UPAB: 20021216
NOVELTY - A glass-plastic composite foil, comprises a polymer-**coated glass** foil (1) with specified low surface (2) undulation and roughness values.

DETAILED DESCRIPTION - A glass-plastic composite foil, especially for use in electronic components and equipment, e.g. displays, comprises a 10-500 microns thick glass foil (1) covered on one or both sides with a 1-200 microns thick polymer layer (4), one or both surfaces having undulations of less than 100 nm and a roughness (RT) of less than 30 nm.

INDEPENDENT CLAIMS are also included for:

(i) production of the above glass-polymer composite foil by producing the glass foil by the down-draw method at a drawing speed of 2-12 m/min., pre treating the glass foil surface, directly applying a layer of the liquid polymer and separating individual polymer-**coated glass** foils; and

(ii) production of the above glass-polymer composite foil by producing the glass foil by the down-draw method at a drawing speed of 2-12 m/min., separating individual glass foils and directly applying a layer of the liquid polymer.

USE - In the production of electronic components and optoelectronic equipment, especially based on liquid crystals or light-emitting layers (claimed), e.g. displays such as **LCDs** and OLEDs.

ADVANTAGE - The composite foil has a wide range of uses, is produced at low cost using an extremely low number of process steps and has the following properties: an optical retardation of not more than 20 (preferably not more than 15) nm, a streak of less than 100 (preferably at most 50, especially at most 30) nm, a transmission of more than 90 % of that of the uncoated foil (the polymer coating producing an opacity increase of less than 1%), a temperature resistance during long term use of up to 130 deg. C and a temperature resistance during short term heating of up to 140 (preferably 180, especially 200) deg. C.

DESCRIPTION OF DRAWING(S) - The drawing shows a cross-sectional view of a glass-plastic composite foil.

glass foil 1
glass foil surface 2
polymer film 4
Dwg.1/2

L42 ANSWER 15 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2000-518338 [47] WPIX
DNN N2000-383563
TI Scuff-resistant coating compositions suitable for preparing antireflection coats onto base materials and basic materials coated with the compositions.

DC P81 U12 U14 V05 V07
PA (SUMO) SUMITOMO CHEM CO LTD
CYC 1
PI JP 2000178469 A 20000627 (200047)* 9p
ADT JP 2000178469 A JP 1998-359043 19981217
PRAI JP 1998-359043 19981217
AB JP2000178469 A UPAB: 20000925
NOVELTY - A scuff-resistant coating composition contains a coating composition obtained by dissolving (A)a fluorine- containing copolymer prepared by copolymerizing a monomer composition containing vinylidene fluoride and hexafluoropropylene and (B)an ethylenic unsaturated group-containing polymerizable compound into (C)a solvent and a silicon oil (0.1-15.0wt% on nonvolatile component basis per the obtained coating composition).

DETAILED DESCRIPTION - A scuff-resistant coating composition contains a coating composition curable by active energy irradiation or heating obtained by dissolving (A)a fluorine-containing copolymer (100 weight parts(pbw)) prepared by copolymerizing a monomer composition containing vinylidene fluoride (20-90wt%) and hexafluoropropylene (5-75wt%) and (B)an ethylenic unsaturated group-containing polymerizable compound (20-200 pbw) into (C)a solvent and a silicon oil (0.1-15.0wt% on nonvolatile component basis per the obtained coating composition). An INDEPENDENT CLAIM is also included for base materials coated with the scuff-resistant coating compositions preferably with the coat having a refractive index of less than or equaling 1.49 and a thickness of 0.01-1 micron.

USE - The base materials include ones made of polymethyl methacrylate, polystyrene, styrene-methyl methacrylate copolymers, styrene-acrylonitrile copolymer, polycarbonate, triacetylcellulose resin, **polyethylene terephthalate resin**, cellulose acetate butyrate resin and glass especially with high transparency and thus the scuff-resistant coating compositions are useful for front panels for projection TV sets, plasma displays and **liquid crystal display** devices, polarizers for **liquid crystal display** devices, optical lenses and films, spectacle lenses, clad materials for optical fibers, light-guiding boards, soundproof boards, sign boards, makers, water tanks, covers for car instruments and solar batteries and show window glass.

ADVANTAGE - The scuff-resistant coating compositions can give coats with low light reflection and excellent scuff resistance, fingerprint anti-adhesion properties, fingerprint adhesion-removing properties and surface lubricity.

Dwg.0/0

L42 ANSWER 16 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2000-499079 [44] WPIX
CR 2000-505765 [45]; 2001-080178 [09]
DNN N2000-369961 DNC C2000-149735
TI Glass-plastics film laminate, useful in electronic device and equipment, e.g. liquid crystal or organic light-emitting diode display, has plastics film applied directly to at least one side of glass.
DC A89 L01 L03 P73
IN BUERKLE, R; DEUTSCHBEIN, S; MAUCH, R; SOSSENHEIMER, K; WEBER, A; KASSNER, R; NATTERMANN, K; SEIBERT, V
PA (BURK-I) BURKLE R; (ZEIS) SCHOTT DISPLAY GLASS AG; (ZEIS) SCHOTT GLAS; (ZEIS) ZEISS STIFTUNG CARL; (SCHO-N) SCHOTT DISPLAYGLAS GMBH; (ZEIS) SCHOTT DISPLAYGLAS GMBH
CYC 88
PI WO 2000041978 A1 20000720 (200044)* DE 38p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB

GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
AU 2000029040 A 20000801 (200054)
EP 1048628 A1 20001102 (200056) DE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
NO 2001003324 A 20010911 (200163)
EP 1150927 A1 20011107 (200168) DE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
KR 2001101433 A 20011114 (200230)
KR 2001105329 A 20011128 (200233)
KR 2001109278 A 20011208 (200237)
CN 1341083 A 20020320 (200246)
JP 2002534305 W 20021015 (200282) 35p

ADT WO 2000041978 A1 WO 2000-EP119 20000111; AU 2000029040 A AU 2000-29040 20000111; EP 1048628 A1 EP 1999-108440 19990430; NO 2001003324 A WO 2000-EP147 20000111, NO 2001-3324 20010704; EP 1150927 A1 EP 2000-907461 20000111, WO 2000-EP119 20000111; KR 2001101433 A KR 2001-708665 20010709; KR 2001105329 A KR 2001-709300 20010724; KR 2001109278 A KR 2001-708664 20010709; CN 1341083 A CN 2000-802622 20000111; JP 2002534305 W JP 2000-593551 20000111, WO 2000-EP119 20000111

FDT AU 2000029040 A Based on WO 200041978; EP 1150927 A1 Based on WO 200041978; JP 2002534305 W Based on WO 200041978

PRAI EP 1999-108440 19990430; DE 1999-19900713 19990111

AB WO 200041978 A UPAB: 20021220

NOVELTY - In glass-plastics film laminate, especially for use in electronic devices and equipment, e.g. displays, which consists of a 10-500 mu m thick **glass film** with a 1-200, preferably 1-100 mu m thick plastics film on at least one side, the plastics film is applied directly.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the production of the film laminate.

USE - The film laminates are used for making electronic devices and opto-electronic equipment, especially based on liquid crystals or light-emitting layers (all claimed), e.g. **liquid crystal displays** (**LCD**) and organic light-emitting diode (OLED) displays. They are suitable for making polarizer films, as electrode substrates and as protective cover.

ADVANTAGE - The process uses very few stages, is economical and avoids the need for adhesives. A very flexible laminate is obtained if the polymer film is 1-100 mu m thick. In contrast to existing methods, the present process can give very thin and homogeneous polymer coatings with high surface quality.

DESCRIPTION OF DRAWING(S) - The drawing shows a section through the glass-plastics film laminate at one edge.

Glass film 1
Glass surface 2
Edge of glass 3
Polymer film extending over edge of glass 4
Edge bead, completely covering edge of glass 5

Dwg.1/2

L42 ANSWER 17 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2000-445799 [39] WPIX
DNN N2000-332766
TI Liquid coating procedure for **coating glass substrates** of photo masks, involves spraying solvent, supplying coating liquid, spreading and adjusting wearing of liquid over entire board surface, sequentially.

DC P42 P84
IN GOTO, S; MATSUNAGA, M; NAKANO, K; SANADA, M
PA (DNIS) DAINIPPON SCREEN SEIZO KK; (DNIS) DAINIPPON SCREEN MFG CO LTD
CYC 3
PI JP 2000157922 A 20000613 (200039)* 16p
KR 2000035316 A 20000626 (200111)
US 6440218 B1 20020827 (200259)
ADT JP 2000157922 A JP 1998-338783 19981130; KR 2000035316 A KR 1999-49370 19991109; US 6440218 B1 US 1999-450946 19991129
PRAI JP 1998-338783 19981130
AB JP2000157922 A UPAB: 20000818
NOVELTY - Solvent is sprayed on surface of rotary board coater during its rotation with revolution number R1. When revolution number is increased to R2, liquid is supplied to board center. During rotation with revolution number R3, the liquid is spread over entire board. When revolution number is R4, the board is held for preset time so that film thickness of applied coating over entire board is adjusted.

USE - For coating liquid like spin on glass (SOG) liquid, photoresist liquid and **polyimide** resin or semiconductor wafer, substrate for optical disks and **glass substrates** for photo masks and **liquid crystal display** devices.

ADVANTAGE - The piling-up of solvent is prevented by spraying solvent. Hence spreading of liquid is made uniform and quantity of liquid required for coating is reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of the rotary board coater.
Dwg.1/15

L42 ANSWER 18 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2000-351855 [31] WPIX
DNN N2000-263595 DNC C2000-107275
TI Transmission-type **LCD** image reproduction unit, e.g. a computer **LCD** monitor, has micro-lens assemblies between convex transparent plates fixed to one another.
DC A14 A89 L03 P81 Q63 T04 U14
IN IGARASHI, T; IWATA, T; MARUYAMA, T; OHISHI, T; OHNISHI, G; TANIDE, H; YOSHIKAWA, H
PA (HITA) HITACHI LTD
CYC 3
PI DE 19949574 A1 20000504 (200031)* 27p
JP 2000214411 A 20000804 (200042) 17p
US 6462794 B1 20021008 (200269)
ADT DE 19949574 A1 DE 1999-19949574 19991014; JP 2000214411 A JP 1999-273352 19990927; US 6462794 B1 US 1999-414481 19991008
PRAI JP 1998-326787 19981117; JP 1998-292345 19981014
AB DE 19949574 A UPAB: 20000630
NOVELTY - A transmission-type **LCD** unit, with micro-lens assemblies between convex transparent plates fixed to one another, is new.

DETAILED DESCRIPTION - An image reproduction unit has a back-lit transmission-type **LCD** element, an optical portion including an image shaping unit for projecting image reproduction information onto the **LCD** element, and a back projection-type screen for reproducing the projection image. The optical portion comprises incident and output side micro-lens arrangements mounted between two transparent plates having a convex curvature with respect to the respective micro-lens arrangements, the ends of these components being fixed or semi-fixed to one another.
INDEPENDENT CLAIMS are also included for the following:

(i) a similar image reproduction unit, in which the transparent plates are replaced by a magnification unit and a transparent support plate, both having a convex curvature with respect to the image shaping unit;

(ii) an optical portion for projecting image reproduction information in the above units;

(iii) an image shaping unit, in which the edges of incident and output side micro-lens arrangements are adhesively bonded;

(iv) a magnification unit comprising a concave Fresnel lens with a Fresnel on the surface opposite to the incident side of an image shaping unit; and

(v) an image reproduction unit with the above magnification unit.

Preferred Features: Fixing of the components is achieved by adhesive bonding using a hot melt film adhesive, a photosetting adhesive or an ultrasonic melt adhesive. The concave Fresnel lens is coated with a moisture proofing material or consists of a material which absorbs less water than polymethyl methacrylate resin.

USE - As e.g. an **LCD** monitor for a computer.

ADVANTAGE - The unit is thin and powerful, has an image shaping unit for correction of distortion resulting from molding and eliminates scattered light even when the back-lighting is large.

DESCRIPTION OF DRAWING(S) - The drawing shows a cross-sectional view of an image reproduction unit according to the invention.

LCD element 1a, 1b
Background light 2
Cathode ray tube 3
Background light aperture 4
Image shaping unit 5a, 5b
Magnification unit 6a, 6b
Support plate 7a, 7b
Screen 8
Separator plate 9
Frame 10
Dwg.2/24

L42 ANSWER 19 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 2000-324676 [28] WPIX
DNN N2000-244347
TI **Transistor** module of hybrid IC,has base and emitter electrodes, their joining surface opposing to periphery of vent and surface of ring are joined airtightly.
DC U11 U14 V04 W01
PA (MITQ) MITSUBISHI ELECTRIC CORP
CYC 1
PI JP 2000100980 A 20000407 (200028)* 6p
ADT JP 2000100980 A JP 1998-266019 19980921
PRAI JP 1998-266019 19980921
AB JP2000100980 A UPAB: 20000613

NOVELTY - **Aluminum** pattern comprises a base electrode (7A), emitter electrode (8A) and ring wall (14) are formed on main surface of substrate (1). An inorganic plate covers the pattern. A vent (16) is provided on the external terminal of base and emitter electrodes. **Airtight** joining is done between the surface of the base and emitter electrodes opposing to the periphery of the vent and the surface of the ring wall.

USE - For hybrid IC utilized in portable telephone.

ADVANTAGE - Semiconductor device by outstanding air resistance and mechanical strength is obtained by providing **airtight** jointing between the surface of base, emitter electrodes and the ring wall.

DESCRIPTION OF DRAWING(S) - The figure shows the sectional view of semiconductor device.

Substrate 1
Base electrode 7A
Emitter electrode 8A
Ring wall 14

Vent 16
Dwg.1/4

L42 ANSWER 20 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1999-323737 [27] WPIX
DNN N1999-243271 DNC C1999-095670
TI Coating compositions, e.g. for lenses - comprises reaction product of composite metal oxide fine particles and silane compound and compound bearing (meth)acryloyl-oxy groups.
DC A26 A60 A82 G01 G02 L03 P42 P73 U14 V05 W04
PA (MITR) MITSUBISHI RAYON CO LTD
CYC 1
PI JP 11116845 A 19990427 (199927)* 8p
ADT JP 11116845 A JP 1997-278743 19971013
PRAI JP 1997-278743 19971013
AB JP 11116845 A UPAB: 19990719
A coating composition contains (A) 20-80 pts.wt. reaction product of (1) 50-95 wt.% of composite metal oxide fine particles with a refractive index of at least 1.8 consisting of at least two metal oxides and (2)50-5 wt.% of a silane cpd. of formula (1) and (B)80-20 pts.wt. of a cpd. bearing at least two (meth)acryloyloxy gps. in the mol. with total of components (A) and (B)=100 pts.wt. and (C)0.01-5 pts.wt. of a photopolymerisation initiator is new.

(X-R1)a-Si(R2)b-(OR3)4-a-b

X = CH2=CH-COO-, CH2=C(CH3)-COO- or CH2=CH-; R1=direct bond or 1-8C alkylene; R2 and R3 = H or 1 - 8 C alkyl; a = 1 - 3; b = 0 - 2; a + b=1-3.

Also claimed are coated articles, pref. for front protection panels, having a cured coat with a refractive index of at least 1.60 of the coating compsn. on a base material with a refractive index of at least 1.58, pref. **polyethylene terephthalate resins** and polycarbonate resins.

USE - The coating compositions are useful for glasses lenses, optical lenses and front protection panels for CRT's, projection TV sets, plasma displays and **liq. crystal displays** made of high refractive index resins.

ADVANTAGE - The coating compsns. can form crosslinked coats with excellent transparency, wear, heat, chemical and weather resistance, surface smoothness, durability and adhesion without interference fringes to the surface of synthetic resin mouldings with a high refractive index.
Dwg.0/0

L42 ANSWER 21 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1999-220829 [19] WPIX
DNN N1999-163666
TI Active element **airtight** sealing method for semiconductor device - involves sealing sides of active element inside recess formed on semiconductor **silicon** substrate.
DC U11
PA (NIDE) NEC CORP
CYC 1
PI JP 11054643 A 19990226 (199919)* 11p
JP 3039463 B2 20000508 (200027) 10p
ADT JP 11054643 A JP 1997-203406 19970729; JP 3039463 B2 JP 1997-203406 19970729
FDT JP 3039463 B2 Previous Publ. JP 11054643
PRAI JP 1997-203406 19970729
AB JP 11054643 A UPAB: 19990518
NOVELTY - A recess (6) is formed on the whole surface of semiconductor **silicon** substrate (1). The semiconductor substrate (2) with active element like **transistor** is formed on the entire surface. The sides of the active element substrate is stuck to the pit like recess to

enable **airtight** sealing. DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for semiconductor device.
USE - For semiconductor device.
ADVANTAGE - Reduces cost as no **resin** is needed for bonding. Retains high frequency characteristics due to air-tightness and thereby increases durability. Improves plane accuracy of substrate and semiconductor device. DESCRIPTION OF DRAWING(S) - The figure shows perspective view of semiconductor device. (1) **Silicon** substrate; (2) Semiconductor substrate; (6) Recess.
Dwg.1/11

L42 ANSWER 22 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1998-226919 [20] WPIX
DNN N1998-180402 DNC C1998-071197
TI Semiconductor device manufacturing apparatus e.g. for **TFT** used in active matrix **LCD** - has second reaction chamber in which **aluminium** film formed on surface of substrate is made flowable.
DC L03 U12 U14
IN YAMAZAKI, S
PA (SEME) SEMICONDUCTOR ENERGY LAB
CYC 3
PI JP 10070089 A 19980310 (199820)* 18p
KR 97072461 A 19971107 (199846)
US 6057234 A 20000502 (200029)
ADT JP 10070089 A JP 1997-120378 19970423; KR 97072461 A KR 1997-16217 19970429; US 6057234 A US 1997-845804 19970424
PRAI JP 1996-132873 19960429
AB JP 10070089 A UPAB: 19980520
The apparatus has a pair of **airtight** reaction chambers which are coupled to each other. The inner atmosphere of the two chambers is controllable. An **aluminium** film is formed on surface of a substrate (100) arranged in the first chamber. The **aluminium** film is made flowable by transferring the substrate along with **aluminium** film into second chamber.
ADVANTAGE - Prevents malfunctioning of **TFT** by poor contact. Performs reflow processing, satisfactorily. Improves reliability and manufacture yield.
Dwg.1/14

L42 ANSWER 23 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1998-136256 [13] WPIX
DNN N1998-108080 DNC C1998-044572
TI **Electroluminescence** lamp - comprises a EL device, sealed with a outer skin film on its upper and lower side.
DC L03 U14 X26
PA (KANN) NEC KANSAI LTD
CYC 1
PI JP 10012376 A 19980116 (199813)* 5p
JP 2950240 B2 19990920 (199944) 5p
ADT JP 10012376 A JP 1996-162537 19960624; JP 2950240 B2 JP 1996-162537 19960624
FDT JP 2950240 B2 Previous Publ. JP 10012376
PRAI JP 1996-162537 19960624
AB JP 10012376 A UPAB: 19980330
The **electroluminescence** lamp comprises a EL device, sealed with a outer skin film on its upper and lower side, in which a luminescence layer and a reflective insulating layer are placed between a transparent electrode and a rear electrode. The luminescence layer comprises fluorescent substance particles on which **moisture-proof** films are formed. The outer skin film comprises plural number of multi-layered transparent **resin** films, of which **moisture**

-**proof** thin film consisting of metal oxide and/or **silicon** nitride is formed at least on one surface.

USE - The **electroluminescence** lamp is used as the back-lights of **LCD** equipments.

ADVANTAGE - Thin EL lamp, having improved **moisture-proof** property and improved life, can be obtd.

Dwg.1/3

L42 ANSWER 24 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1997-011274 [01] WPIX
CR 1997-147827 [14]
DNN N1997-009911 DNC C1997-003045
TI Colour filter array element prodn. - by successively fusing different additive colour dyes into a polymeric dye image receiving layer on a **glass substrate**.
DC A23 A89 G05 L03 P75 P81 U11 U14
IN DEBOER, C D; FASSLER, W N
PA (EAST) EASTMAN KODAK CO
CYC 2
PI US 5576267 A 19961119 (199701)* 6p
JP 09138305 A 19970527 (199731) 8p
ADT US 5576267 A US 1996-633283 19960416; JP 09138305 A JP 1996-228694 19960829
PRAI US 1996-633283 19960416; US 1995-2952P 19950830
AB US 5576267 A UPAB: 19970410

A colour filter array element is made by (a) coating a glass support with a polymeric dye image-receiving layer, (b) coating the receiving layer with at least one additive prim. colour dye from a solvent that does not swell or penetrate the polymeric dye image-receiving layer, (c) placing a stencil mask with the desired pixel shape in intimate contact with the surface of the polymeric dye image-receiving layer, (d) fusing the dye into the polymeric dye image-receiving layer by heating or by using a solvent vapour treatment using a solvent which will swell or penetrate the dye image-receiving layer, (e) removing the stencil mask, (f) removing all unfused dye with a solvent wash and (g) repeating steps (b) to (f) twice using different additive prim. colours.

USE - The colour filter arrays are useful e.g. in thermal transfer systems for providing prints from pictures which have been generated electronically from a colour video camera (e.g. as described in US4621271), and in the prodn. of liq. crystal colour displays for use e.g. in computer terminals, televisions, etc.

ADVANTAGE - The colour filter arrays have good resistance to temp. and fading, and can withstand the rigorous processing conditions involved e.g. in the fabrication of **liq. crystal displays** by application of a transparent conducting layer e.g. of ITO to the array by vacuum sputtering followed by curing and etching, the subsequent application of a thin polymeric alignment layer e.g. of **polyimide**, which involves treatment at elevated temps. e.g. at up to 200 deg. C. for periods of several hours and which has an adverse effect on gelatine-based colour filter arrays.

Dwg.0/0

L42 ANSWER 25 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1996-399438 [40] WPIX
DNN N1996-336717
TI Semiconductor device e.g. IGBT with **airtight** sealing package used in drive system of vehicle - includes amorphous Si film which is surmounted by **polyimide** film used for discharge protection.
DC U12
PA (FJIE) FUJI ELECTRIC CO LTD
CYC 1

PI JP 08195488 A 19960730 (199640)* 4p
JP 3265886 B2 20020318 (200222) 4p
ADT JP 08195488 A JP 1995-4593 19950117; JP 3265886 B2 JP 1995-4593 19950117
FDT JP 3265886 B2 Previous Publ. JP 08195488
PRAI JP 1995-4593 19950117
AB JP 08195488 A UPAB: 19961007
The device consists of an n type layer (1) furnished with a first p type domain (3). A n+ type domain is formed in the surface of the p type domain. A polysilicon gate electrode (4) is formed through a gate oxide film (5) in contact with the p type domain. Using a metal film, a gate pad (10) is formed for the gate electrode. An emitter electrode (7) is formed through an interlayer insulating film (6) over the gate electrode. A second p type domain (21) is formed isolated from the first p type domain, in the n type layer.

An amorphous Si film (8) to be used as field plate is formed over the emitter electrode. This amorphous Si film is also formed over an oxide film (51). This oxide film is formed over the substrate between the two p type domains. This oxide film constitutes the breakdown voltage structure. This amorphous Si film is also covered by a **polyimide** film (40) which is used for discharge prevention.

ADVANTAGE - Raises breakdown voltage upto range of 2500V. Does not require additional special processes.
Dwg.1/4

L42 ANSWER 26 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1996-023887 [03] WPIX
DNN N1996-020024
TI Glare protection film mfg method for panel type display devices e.g. **LCD**, CRT - by using emulsion of UV stiffening resin of thickness 3fm which is spread over transparent film.
DC P81
PA (FUIT) FUJITSU LTD
CYC 1
PI JP 07294708 A 19951110 (199603)* 9p
ADT JP 07294708 A JP 1994-89518 19940427
PRAI JP 1994-89518 19940427
AB JP 07294708 A UPAB: 19960122
The glare protection film mfg method involves generation of a rough surface by spraying the globular glass beads on the surface of a metallic plate by compressed air. A transparent film (21) of **polyethylene terephthalate resin** of 125fm thickness is pressed over the rough surface for 15 minutes under hot conditions at 160 deg centigrade and at a pressure of 10kg/cm2.

Then an emulsion of UV stiffening type resin (22) is spread over this transparent film for a thickness of 3fm and is dried by blowing over hot air at temperature 110 deg centigrade. After drying, it irradiates the UV rays of 200mJ/cm2 and forms thin film by stiffening process.

ADVANTAGE - Reduces local specular reflection and hence improves effect of glare protection. Eases mfg process.
Dwg.1/7

L42 ANSWER 27 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1995-142412 [19] WPIX
DNN N1995-112069 DNC C1995-065705
TI Divergence type **electroluminescence** of similar **moisture -proof** to glass plate - sealed between pair of electrodes **electroluminescence** main body contg. dielectric and **electroluminescence** fluorescent material.
DC A85 L03 U14
PA (SHIE) SHINETSU CHEM IND CO LTD
CYC 1

PI JP 07065950 A 19950310 (199519)* 4p
ADT JP 07065950 A JP 1993-215420 19930831
PRAI JP 1993-215420 19930831
AB JP 07065950 A UPAB: 19950524
An **electroluminescence** is formed by sealing an **electroluminescence** main body containing a dielectric and an **electroluminescence** fluorescent material placed between a pair of electrodes by a **moisture-proof** film formed by stacking a synthetic **resin** film and a transparent thin **glass film**.

Any of transparent material, which maintains stable state at a temperature range of lower than 100 deg.C, can be **moisture-proof** film. Polypropylene, polyethylene, PET, polyvinylidene chloride, and polyester are example of those material, however, PET and polyvinylidene chloride are the most pref.

ADVANTAGE - A long life and low cost divergency type **electroluminescence** with **moisture-proof** property equivalent to that of a glass plate is obtd.
Dwg.2/3

L42 ANSWER 28 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1995-129023 [17] WPIX
DNN N1995-101456 DNC C1995-059754
TI Reduction of image retention - comprises suspending conducting spheres into an orientation layer of TN-**LCD**.
DC A85 L03 P81 U14
PA (ANON) ANONYMOUS
CYC 1
PI RD 371056 A 19950310 (199517)*
ADT RD 371056 A RD 1995-371056 19950220
PRAI RD 1995-371056 19950220
AB RD 371056 A UPAB: 19950530
Image retention, also referred to as after image or image sticking, can occur in active-matrix addressed **LCDs**. It is visible when, after removing a pattern that has been displayed for some time, a faint image of the pattern is still observable and slowly fades out in time. This phenomenon is thought to originate from dc voltages on the pixel electrodes, caused by the addressing. It is generally accepted that lowering the resistivity of the orientation layer can reduce image retention. Apart from changing the chemical structure of the orientation layer, another way to reduce the resistivity of the orientation layer is by suspending small conducting spheres like ATO (Antimony doped Tin Oxide) or ITO (Indium Tin Oxide) into a **polyimide** that it used as orientation layer material. This can be done using an original **polyimide** solution or polyamic acid solution. 20 nm diameter ATO spheres with a narrow particle size distribution, suspended in water were added to a mixture of a **polyimide** solution and gamma-butyrolactone, resulting in an ATO concentration of 6 wt.% on **polyimide** basis. This suspension was spun-coated onto ITO-**coated glass substrates**, dried, rubbed and processed to a standard 90 deg. TN-**LCD**. As a reference test cells were processed using a mixture of **polyimide** and butyrolactone. The resulting test cells were filled with a nematic LC mixture and investigated with respect to the RC time of the LC and with respect to image retention. The degree of image retention was characterised by the storage factor (SF), in which SF is defined as: SF=(F(2)-F(100))/(F(2)), in which F(2) and F(100) are the 25 Hz factor amplitudes measured 2 and 100 sec after adding 0.5 V dc. Results are summarised in the following Table. As can be seen from the results, the resistivity of the LC mixture (characterised by the RC time) remains unaffected upon using an ATO suspension, whereas the storage factor SF is

reduced to half of the value obtained for cells with ATO. The latter indicates that image retention is also reduced by suspending ATO spheres into the **polyimide** layer.
USE- For active matrix addressed **LCDs**.
ADVANTAGE-Image retention is reduced.
Dwg.0/0

L42 ANSWER 29 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1995-128950 [17] WPIX
DNN N1995-101401 DNC C1995-059715
TI Electrode substrate for **LCD** panel - comprising laminate of multilayer bodies of non-permeable **resin** layer and bridging **resin** layer which does not curl, etc..
DC A85 L03 P73 P81
PA (FUJO) FUJIMORI KOGYO KK
CYC 1
PI JP 07027134 B2 19950329 (199517)* 6p
JP 01050021 A 19890227 (199517)
ADT JP 07027134 B2 JP 1987-208009 19870820; JP 01050021 A JP 1987-208009 19870820
FDT JP 07027134 B2 Based on JP 01050021
PRAI JP 1987-208009 19870820
AB JP 95027134 B UPAB: 19950508
Electrode substrate comprises a laminate of multilayer bodies combined through **adhesive layers**. The multilayer bodes are made of non-permeable **resin** layers and bridging **resin** layers.
USE/ADVANTAGE - Used for **LCD** panel. The substrate is transparent, optically isotropic, non-permeable, **moisture-proof**, heat-proof, thin and tough. It has a symmetrical compsn. and curling is prevented.

L42 ANSWER 30 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1995-024923 [04] WPIX
DNN N1995-019330 DNC C1995-011385
TI Appts. for CVD of thin film on semiconductor wafer or **LCD** substrate - including transparent case defining inner space with resistance heater and thermocouple which is isolated from process chamber to prevent corrosive gases affecting heating and measurement.
DC L03 U11 U14
IN MURAKAMI, S
PA (TKEL) TOKYO ELECTRON LTD
CYC 5
PI GB 2279366 A 19950104 (199504)* 34p
JP 07078766 A 19950320 (199520) 6p
US 5462603 A 19951031 (199549) 12p
GB 2279366 B 19961218 (199703)
SG 46325 A1 19980220 (199821)
JP 3165938 B2 20010514 (200129) 6p
KR 260119 B1 20000701 (200131)
ADT GB 2279366 A GB 1994-12704 19940624; JP 07078766 A JP 1993-179845 19930624; US 5462603 A US 1994-265139 19940624; GB 2279366 B GB 1994-12704 19940624; SG 46325 A1 SG 1996-2937 19940624; JP 3165938 B2 JP 1993-179845 19930624; KR 260119 B1 KR 1994-14586 19940624
FDT JP 3165938 B2 Previous Publ. JP 07078766
PRAI JP 1993-179845 19930624
AB GB 2279366 A UPAB: 19950328
Semiconductor processing appts. has **airtight** process chamber (12) for substrate (W) to be processed, the substrate passing into and out of the chamber via a gated passage (GI). Means are provided for supplying process gas to the chamber, for exhausting the chamber, and for supporting

the substrate in the chamber. A case (13) arranged in the process space of the chamber covers an opening (12a) formed in its wall and defines an inner space airtightly isolated from the process space. The case has a main plate (31) made of light transmissive material facing the supported substrate, the plate having a flat outer surface with a larger contour than that of the substrate, and a cover (34) closing its inner space and the chamber. A resistance heater (14) is provided in the inner space, adjacent the main plate, and is connected by leads (15) to an external electric power supply (25). A temp. sensor (16) is also provided in the inner space for measuring the temp. of the resistance heater. Means are also provided for supplying (43) an inactive gas to the inner space and for exhausting (44) it.

USE - Appts. is for processing semiconductor wafers or **LCD** substrates by heating them in a process gas atmos. to achieve chemical vapour deposition.

ADVANTAGE - Appts. ensures the formation of a uniform thin film over the entire surface of a wafer. Because the resistance heater and thermocouple are housed in an enclosure which is separate from the process chamber, they are not exposed to corrosive gases which can change their operating parameters and cause rapid failure.

Dwg.1/5

L42 ANSWER 31 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1994-206173 [25] WPIX
DNN N1994-162433 DNC C1994-094262
TI Prevention of cracks occurring on **glass substrate** - by applying adhesive having **moisture-proof** effect, e.g. high speed setting epoxy , gp adhesive, along parting portions and curing.
DC A81 G03 L01 L03 U14
PA (SANS-N) SANSEI DIAMOND KOGYO KK
CYC 1
PI JP 06144875 A 19940524 (199425)* 3p
ADT JP 06144875 A JP 1992-300828 19921111
PRAI JP 1992-300828 19921111
AB JP 06144875 A UPAB: 19940810
Adhesive having **moisture-proof** effect is applied along parting portions and cured. The adhesive having **moisture-proof** and proper pliability used is such as in ray radiation setting **resin**, high speed setting epoxy gp. adhesive, quick drying adhesive, etc.

USE/ADVANTAGE - The process is used for parted portion of **liq . crystal display** substrate. The process avoids generation of cracks at parted portion of the substrate due to residual stress.

Dwg.1/8

L42 ANSWER 32 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1993-380129 [48] WPIX
DNN N1993-293503 DNC C1993-168664
TI Phase difference plate, for **LC display** devices - contg. copolymer resin consisting of mixt. of thermoplastic resins of different glass transition points.
DC A89 L03 P81 U14
PA (SUMO) SUMITOMO CHEM CO LTD
CYC 1
PI JP 05281418 A 19931029 (199348)* 4p
ADT JP 05281418 A JP 1992-81992 19920403
PRAI JP 1992-81992 19920403
AB JP 05281418 A UPAB: 19940120
A phase difference plate contains a thermoplastic copolymer resin as the resin component which is mixt. of (A) a thermoplastic resin having a glass

transition pt. (Tg) of 30 deg.C or higher and (B) a thermoplastic resin having Tg of 0 deg.C or lower or (C) a thermoplastic resin having two Tg at a higher temp. than 30 deg.C and at a lower temp. than 0 deg.C.

Resin (A) is, e.g. polycarbonate, polyacrylonitrile or **polyethylene terephthalate**. **Resin** (B) is, e.g. polyethylene type resins, polybutadiene, polydimethylsiloxane. Resin (C) is, e.g., styrene-butadiene copolymer or acrylonitrile-styrene-butadiene copolymer.

In an example, 75 pts.wt. polystyrene and 25 pts.wt. styrene-butadiene copolymer were mixed and extruded to obtain a film of 300 microns thick. The film was drawn monoaxially to 1.5 times at 120 deg.C in a speed of 300 mm/min. to obtain a phase difference plate which had a retardation of 369 nm and a visual angle of 52 deg.

USE/ADVANTAGE - The phase difference plates are laminated to provide a **liq. crystal display** device, etc. The phase difference plate has good visual angle characteristics.

Dwg. 0/0

L42 ANSWER 33 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1992-403455 [49] WPIX
DNC C1992-179229
TI Epoxy resin compsn. - comprises novolak resin and curing agent, inorganic filler, ion exchange agent and flame retardant.
DC A21 A85 L03
PA (TOAG) TOA GOSEI CHEM IND LTD
CYC 1
PI JP 04300951 A 19921023 (199249)* 5p
ADT JP 04300951 A JP 1991-89502 19910328
PRAI JP 1991-89502 19910328
AB JP 04300951 A UPAB: 19931116

Compsn. (C) comprises an epoxy resin, a curing agent an inorganic filler, a flame-retardant agent of (A1)Sb2O5, (A2)Sb2O4, or (A3)Sb5O13, and an inorganic ion-exchange substance.

Epoxy resin is pref. phenolnovolak-, cresol-novolak-epoxy-resin, etc.; of which content of chloride-ion is pref. less than 10 ppm, hydrolysing chlorine-ion is pref. less than 1000 ppm; and amt. of epoxy main is pref. 80-40 pts.wt. (based on 100 pts.wt. of total epoxy of resin and curing agent). Curing agent is most pref. phenolnovolak-, cresol-novolak-resin; of which amt. is pref. 10-70 pts.wt.

Inorganic filler is pref. fused silica, crystal-silica, quartz-glass, alumina, talc, etc,: of which amt, is pref. 100-400 pts.wt. (I)ion-exchanging substance is most pref. (hydrate of) magnesium-oxide, bismuth-oxide, etc.; of which amt. is pref. 0.1-100 pts.wt. based on 100 pts.wt. of flame retardant agent. Total amt. of flame retardant and filler is pref. 0.1-30 pts.wt.

USE/ADVANTAGE - A compsn. of epoxy-resin used for sealing of semi-conductor, e.g. IC, **transistor**, LSI, etc. can be produced, which is superior in reliability in **moisture proof** for **aluminium** wire, wtc. and flame-retardan

Dwg.0/0

L42 ANSWER 34 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1992-166983 [20] WPIX
DNN N1992-124761 DNC C1992-076754
TI Improved heat resistant **moisture-proof** film - having excellent transparency, flexibility and strength, useful as package film on back line electroluminescent elements of **liq. crystal displays**.
DC A85 L03 P73 Q34 U14
IN OHASHI, S; SAWADA, T; YOSHIDA, S
PA (MITU) MITSUBISHI KASEI POLYTEC CO; (MITU) MITSUBISHI CHEM CORP; (MITS-N)

MITSUBISHI POLYTECH KK; (MITU) MITSUBISHI KASEI CORP
CYC 16
PI WO 9206842 A1 19920430 (199220)* JA 34p
RW: AT BE CH DE DK ES FR GB GR IT LU NL SE
W: KR US
EP 505575 A1 19920930 (199240) EN 21p
R: DE FR GB IT
JP 05008346 A 19930119 (199308) 15p
US 5346752 A 19940913 (199436) 12p
EP 505575 B1 19971229 (199805) EN 21p
R: DE FR GB IT
DE 69128524 E 19980205 (199811)
JP 3020692 B2 20000315 (200018) 14p
KR 175919 B1 19990501 (200051)
ADT WO 9206842 A1 WO 1991-JP1417 19911017; EP 505575 A1 EP 1991-917805 19911017, WO 1991-JP1417 19911017; JP 05008346 A JP 1991-298490 19911017; US 5346752 A WO 1991-JP1417 19911017, US 1992-859702 19920729; EP 505575 B1 EP 1991-917805 19911017, WO 1991-JP1417 19911017; DE 69128524 E DE 1991-628524 19911017, EP 1991-917805 19911017, WO 1991-JP1417 19911017; JP 3020692 B2 JP 1991-298490 19911017; KR 175919 B1 KR 1992-701408 19920613
FDT EP 505575 A1 Based on WO 9206842; US 5346752 A Based on WO 9206842; EP 505575 B1 Based on WO 9206842; DE 69128524 E Based on EP 505575, Based on WO 9206842; JP 3020692 B2 Previous Publ. JP 05008346
PRAI JP 1990-278406 19901017
AB WO 9206842 A UPAB: 19931006
A heat resistant **moisture-proof** film comprises three layers (A), (B), (C) in which (A) is sandwiched between (B) and (C). (A): the first layer (A) is a transparent monolayer or a transparent laminated body composed of a substrate film (1) and a transparent **silicon** oxide thin film formed on at least one side of the substrate film. (1) comprises polyvinyl alcohol having a saponification degree of 99 mol.% or higher. (B): The second layer is one layer or a laminated body composed of transparent plastic which is not polyvinyl alcohol. On at least one side of at least one film a transparent silica oxide thin film (100 - 5000 Angstroms thick) is formed. In (B) the following conditions are satisfied: (i) the sum of the absolute values of the heat shrinkage in the longitudinal and transverse directions is 1% or lower; (ii) its transmittance of light emitter by ASTM D-1003 is 85% or higher. (C): The third layer comprises a heat sealable **resin** layer.

The film has excellent transparency, flexibility and strength. It is economical to produce. Since it can be used under severe conditions for a prolonged time it is especially useful as a package film for back line EL elements of **liquid crystal displays** which require a high degree of moisture proofing. (1/5)
1/5

L42 ANSWER 35 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1991-365290 [50] WPIX
CR 1994-082572 [10]
DNN N1991-279619
TI Dynamic type semiconductor storing device with sense amplifier - has pull-up and down **transistors**, string address decoder for controlling transfer gate and timing generator NoAbstract Dwg 4,5/5.
DC U13 U14
PA (SHAF) SHARP KK
CYC 1
PI JP 03245396 A 19911031 (199150)*
ADT JP 03245396 A JP 1990-43753 19900222
PRAI JP 1990-43753 19900222
AB JP 03245396 A UPAB: 19940421
Cartridge has guide roller comprising 100 pts.wt. polyethylene resin, hard

vinylchloride resin or **polyethylene.terephthalate resin** and 1 - 20 pts.wt. quat. ammonium salt.

ADVANTAGE - Static charge is suppressed to 1/10. So that running torque increase is reduced and drop out is decreased to 1/7.

In an example the guide roller was produced from the resin comprising polyethylene resin and 5 wt.% quat. ammonium salt of formula (I). When magnetic tape cassette having magnetic tape (Co-gammae2O3, 35 m2/g), the guide roller and resin hub, was driven at 23deg.C, 60% RH for 100 reciprocal runs, tape static charge was 1.5 kV, torque after driven was 7 gf-cm and drop out was 2/hr. @(3pp Dwg.No.O/O)@

L42 ANSWER 36 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1991-358854 [49] WPIX
CR 1993-324095 [41]; 1995-342062 [44]; 1999-141521 [12]; 2000-081347 [07]; 2000-129897 [12]; 2000-132590 [12]
DNN N1994-214220 DNC C1994-124441
TI Soldering components in an electronic circuit - by removal of the components and solder ball oxide layer and forming a thin oxide layer on the solder ball prior to aligning and soldering.
DC L03 M13 M23 P55 U11 V04 X24
IN HARADA, M; HAYASHIDA, T; NISHIKAWA, T; SATOH, R; SHIRAI, M; IJUIN, M; INOUE, K; SATO, R; TANIGUCHI, Y
PA (HITA) HITACHI LTD
CYC 2
PI JP 03241755 A 19911028 (199149)* 5p
US 5341980 A 19940830 (199434)B 23p
US 5816473 A 19981006 (199847)
JP 2865770 B2 19990308 (199915) 6p
US 5878943 A 19990309 (199917)
US 6227436 B1 20010508 (200128)
US 6471115 B1 20021029 (200279)
ADT JP 03241755 A JP 1990-36033 19900219; US 5341980 A CIP of US 1991-656465 19910219, US 1992-890255 19920529; US 5816473 A CIP of US 1991-656465 19910219, Div ex US 1992-890255 19920529, Cont of US 1994-240320 19940510, US 1995-578054 19951222; JP 2865770 B2 JP 1990-36033 19900219; US 5878943 A CIP of US 1991-656465 19910219, CIP of US 1992-890255 19920529, Cont of US 1994-240320 19940510, CIP of US 1995-578054 19951222, US 1996-753018 19961119; US 6227436 B1 CIP of US 1991-656465 19910219, CIP of US 1992-890255 19920529, Cont of US 1994-240320 19940510, CIP of US 1995-578054 19951222, Div ex US 1996-753018 19961119, US 1998-160288 19980925; US 6471115 B1 CIP of US 1991-656465 19910219, Div ex US 1992-890255 19920529, Cont of US 1994-240320 19940510, CIP of US 1995-578054 19951222, Div ex US 1996-753018 19961119, CIP of US 1998-160288 19980925, US 2000-585391 20000602
FDT US 5816473 A Div ex US 5341980; JP 2865770 B2 Previous Publ. JP 03241755; US 5878943 A CIP of US 5341980, CIP of US 5816473; US 6227436 B1 CIP of US 5341980, CIP of US 5816473, Div ex US 5878943; US 6471115 B1 Div ex US 5341980, CIP of US 5816473, Div ex US 5878943, CIP of US 6227436
PRAI JP 1990-36033 19900219; JP 1991-216953 19910828; JP 1991-345829 19911227; JP 1992-102952 19920422; JP 1993-334603 19931228; JP 1994-319810 19941222
AB US 5341980 A UPAB: 19941013 ABEQ treated as Basic
Electronic circuit components are soldered together by:- (a) sputter cleaning the surfaces of the components to be joined and the solder material to remove the oxide and contamination layer; (b) positionally aligning the components in an atmosphere which forms a relatively thinner oxide layer on the cleaned surfaces; (c) heating the solder to perform the bonding operation on the components in a non-oxidising atmosphere.

Also claimed are methods of soldering the component together using the above claimed method but supplying oxygen to the surfaces to form the second oxide layer, and also supplying solder material which does not have

an oxide or contamination layer.
USE - In aligning electronic components and soldering together in an electronic circuit, without the use of flux.
ADVANTAGE - The thin oxide coating around the solder ball after removal of the thick contamination layer, splits during the soldering operation to allow unoxidised solder to contact the components and thus form an efficient reliable joint.
Dwg.8/23

AB JP 03241755 A UPAB: 20021212
A semiconductor device is claimed of which circumference of a semiconductor element is shielded. A **polyimide resin** layer of formula (I) is formed on surface of the element directly or via an insulating layer. (In the formula R1 = (A), (B) or (C), R2 = (D), (E), (F) n = an integral number, an mol. ratio compsn. is (A)/(B) = 99/1-30/70, ((A)+(B))/(C) = 99/1-50/50, (D)/(E) = 99/1-50/59, ((D):(E))/(F) = 99/1-70/30).
ADVANTAGE - The device is **moisture-proof**, since adhesion of semiconductor substrate or SiO2 film etc. is improved, and there is no leak current and accuracy of connection between wire and electrode.
In an example, a semiconductor device was prepd. by a PNP type **transistor** being formed on a **Si** semiconductor element (1) as surface layer, a protection layer for an interemitter and an interbase corrector of SiO2 film (2) were formed on it, a basic dilectrode (3) and an emitter electrode were vapour deposited on it, (1) was fixed with tub-lead (7), between electrode of (1) a lead wire was boud by Au or **Al** wire (5), a **polyimide resin** (6) for protection was formed on it, and then shielded by shield **resin** (8). As the result the device had **moisture proof** at 125 deg.C for 800 hours.
Dwg.1/2

L42 ANSWER 37 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1991-358842 [49] WPIX
DNN N1991-274724 DNC C1991-154912
TI Semiconductor device with improved **polyimide** protection layer - comprising **polyimide resin** layer formed on surface of element opt. via insulating layer.
DC A26 A85 L03 U11
PA (TOSM) TOSHIBA CHEM CORP
CYC 1
PI JP 03241743 A 19911028 (199149)* 5p
JP 2999500 B2 20000117 (200008) 5p
ADT JP 03241743 A JP 1990-38111 19900219; JP 2999500 B2 JP 1990-38111 19900219
FDT JP 2999500 B2 Previous Publ. JP 03241743
PRAI JP 1990-38111 19900219
AB JP 03241743 A UPAB: 19930928
A semiconductor device is claimed of which circumference of a semiconductor element is shielded. A **polyimide resin** layer of formula (I) is formed on surface of the element directly or via an insulating layer. (In the formula R1 = (A), (B) or (C), R2 = (D), (E), (F) n = an integral number, an mol. ratio compsn. is (A)/(B) = 99/1-30/70, ((A)+(B))/(C) = 99/1-50/50, (D)/(E) = 99/1-50/59, ((D):(E))/(F) = 99/1-70/30).
ADVANTAGE - The device is **moisture-proof**, since adhesion of semiconductor substrate or SiO2 film etc. is improved, and there is no leak current and accuracy of connection between wire and electrode.
In an example, a semiconductor device was prepd. by a PNP type **transistor** being formed on a **Si** semiconductor element (1) as surface layer, a protection layer for an inter emitter and an inter

base corrector of SiO2 fil (2) were formed on it, a basic dilectrode (3) and an emitter electrode were vapour deposited on it, (1) was fixed with tub-lead (7), between electrode of (1) a lead wire was boud by Au or **Al** wire (5), a **polyimide resin** (6) for protection was formed on it, and then shielded by shield **resin** (8). As the result the device had **moisture proof** at 125 deg.C for 800 hours. @(5pp Dwg.No.1/2)@d on

L42 ANSWER 38 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1991-305547 [42] WPIX
DNN N1991-234091 DNC C1991-132245
TI Reliable hybrid-type device - in which two plane substrates are joined by a column-like conductor comprising thermoplastic resin and metal powder.
DC A85 L03 U11 U13
IN KOMINE, Y
PA (MITQ) MITSUBISHI DENKI KK
CYC 4
PI GB 2243032 A 19911016 (199142)*
FR 2660798 A 19911011 (199151)
JP 03291947 A 19911224 (199209)
GB 2243032 B 19950104 (199504)
ADT GB 2243032 A GB 1991-3393 19910219; FR 2660798 A FR 1990-11760 19900924; JP 03291947 A JP 1990-92348 19900409; GB 2243032 B GB 1991-3393 19910219
PRAI JP 1990-92348 19900409
AB GB 2243032 A UPAB: 19930928
A hybrid-type device comprises: a first plane substrate; first function elements (I) arranged either one- or two-dimensionally on the first plane substrate; a second plane substrate; second function elements (II) arranged either one- or two-dimensionally on the second plane substrate to as to oppose the first function elements; a conductive thermoplastic resin for electrically connecting electrodes of (I) to electrodes of (II), and for integrating the 2 substrates.

Pref. (i) the conductive thermoplastic resin member is a column-like bump, which is obtd. by dispersing uniformly metal powder, e.g. Ag, Au, Ag/Pd, Ag/Pt, Cu, over thermoplastic resin; (ii) the first plane substrate is pressed against the second plane substrate thereby electrically connecting (I) and (II); (iii) (I) may be a photodiode, **LCD** device; (iv) (II) element may be a CCD or a **transistor**.

USE/ADVANTAGE - Reliable hybrid type device in which 2 plane substrates are joined by a column-like conductor so that the device is integrated. Function elements on the 2 substrates are arranged in opposition so that the column-like conductor can connect electrodes of the 2 elements.
4/5

L42 ANSWER 39 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1991-291577 [40] WPIX
DNN N1991-223282 DNC C1991-126172
TI Transparent **moisture-proof** film for packaging - contg. **silicon** oxide thin film and a thermoplastic substrate film e.g. polyamide, **polyimide**, ethylene -vinyl acetate copolymer **resin**.
DC A17 A23 A85 P73
PA (MITU) MITSUBISHI KASEI POLYTEC CO
CYC 1
PI JP 03193442 A 19910823 (199140)*
ADT JP 03193442 A JP 1989-335296 19891225
PRAI JP 1989-335296 19891225
AB JP 03193442 A UPAB: 19930928
Film comprises a first layer (A) and a second layer (B) laminated to one side of the layer (A). (A) is a film (A) composed of a substrate film (a)

made of a thermoplastic **resin** of a saponified ethylene-vinyl acetate copolymer **resin**, a polyamide **resin**, a **polyimide resin**, or their mixt., and a **Si** oxide thin film formed on one or opposite sides of (a); or (A) comprises at least two films (A) laminated together. (B) comprises a laminate contg. a transparent film (A) which is composed of a transparent thermoplastic **resin** substrate film (b) having a water absorption degree below 1% when the film is dipped in water for 24 hrs. at 23 deg.C and a **Si** oxide thin film formed on one or opposite sides of (b).

The **Si** oxide thin film is pref. formed by vacuum deposition, sputtering, or ion plating.

USE/ADVANTAGE - Used for packaging films of EL (**electroluminescence**) devices for **LCD** backlight in cars, music instrument, OA, FA, etc.. The **moisture-proof** properties are high even under high temp. humid conditions. (15op Dwg.No.0/9)

L42 ANSWER 40 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1991-098254 [14] WPIX
DNN N1991-075774 DNC C1991-042237
TI **Moisture-proof** packaging material - contg. fluoro **resin film adhesive layer** and sealant **resin** film, useful for electroluminescent film device.
DC A18 A92 L03 P73
PA (NIPQ) DAINIPPON PRINTING CO LTD
CYC 1
PI JP 03042244 A 19910222 (199114)*
ADT JP 03042244 A JP 1989-177809 19890710
PRAI JP 1989-177809 19890710
AB JP 03042244 A UPAB: 19930928
A **moisture-proof** packaging material is composed of a fluororesin **film**, an **adhesive layer**, and a sealant **resin** film, laminating in that order.

The fluororesin film is made mainly with a poly(trifluoro chloroethylene). The sealant **resin** film is made with an ethylene-alpha-olefin random copolymer partially or wholly graft-modified. The adhesive side of the fluoro-**resin** film is corona-discharge treated. For the **adhesive layer**, acrylic, vinyl acetate, etc., **resins** are useful. As the alpha-olefin for the sealant **resin** film, propylene 1-butene, etc., are useful.

USE/ADVANTAGE - For packaging of **electroluminescence** devices. The bonding strength between the films is high. The devices can be tightly packaged.
0/2

L42 ANSWER 41 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1990-299471 [40] WPIX
DNN N1990-230338 DNC C1990-129334
TI Transparent electroconductive film with moisture impermeability - used in AC powder type electroluminescent panels and **liq**. **crystal displays**.
DC A85 L03 P81 P85 U14
IN NIKAIDO, M
PA (TOKE) TOSHIBA KK
CYC 5
PI EP 390569 A 19901003 (199040)*
JP 02259726 A 19901022 (199048)
CN 1049752 A 19910306 (199145)
US 5140450 A 19920818 (199236) 11p
CN 1059614 A 19920318 (199244)#
EP 390569 B1 19931222 (199351) EN 18p

DE 69005346 E 19940203 (199406)
US 5300858 A 19940405 (199413) 11p
KR 9504551 B1 19950502 (199702)
ADT EP 390569 A EP 1990-303391 19900329; JP 02259726 A JP 1989-81954 19890331; US 5140450 A US 1990-501788 19900328; CN 1059614 A Div ex CN 1990-101896 19900331, CN 1991-109708 19900331; EP 390569 B1 EP 1990-303391 19900329; DE 69005346 E DE 1990-605346 19900329, EP 1990-303391 19900329; US 5300858 A Div ex US 1990-501788 19900328, US 1992-895132 19920608; KR 9504551 B1 KR 1990-4496 19900330
FDT DE 69005346 E Based on EP 390569; US 5300858 A Div ex US 5140450
PRAI JP 1989-81954 19890331
AB EP 390569 A UPAB: 19930928
A transparent electro-conductive film (I) is claimed comprising: (a) optical transparent polymer film contg. 1-20 wt.% hydrophobic resin particles having av. particle diam. 0.5-10 microns; and (b) transparent electro-conductive thin film formed on principal surface(s) of (a) Also claimed are AC power type electroluminescent (EL) panels and **liq**. **crystal displays** (**LCD**), contg. (I).

Pref. polymer film (a) having thickness 50-100 microns, substantially comprises (mixt.) polyethylene terephthalate (PET), polyether sulphone (PES), polyacrylate, polycarbonate, polymethyl methacrylate, pllystyrene, polysulphone or polyether etherketone.

pref. for AC powder type EL panels are PET and PES; and for LCD2 PES and polyacrylate having less optical anisotropy, and PET having its optical axis controlled by uniaxial orientation.

USE/ADVANTAGE - Transparent electro-conductive film having improved moisture impermeability provides cheaper AC powder type EL panels and OCDs having longer life.
1/8

L42 ANSWER 42 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1990-197198 [26] WPIX
DNN N1990-153245 DNC C1990-085568
TI Thick film **electroluminescence** cell - comprising phosphoric cpd. thin film formed on zinc sulphide gp. phosphor powder surface dispersed in organic binder.
DC A85 L03 U14
PA (SNLE) STANLEY ELECTRIC CO LTD
CYC 1
PI JP 02129895 A 19900517 (199026)*
ADT JP 02129895 A JP 1988-280481 19881108
PRAI JP 1988-280481 19881108
AB JP 02129895 A UPAB: 19930928
Thick film **electroluminescence** (EL) cell comprises a phosphor, of which a phosphoric cpd. thin film is formed on surface of zinc sulphide gp. phosphor powders, is dispersed in an organic binder to form a luminous layer.

A phosphoric acid cpd. thin film (2) is formed on phosphor powders (1) by 100 g EL phosphor (ZnS:Cu/Cl) is dispersed in 0.4 g sodium diphosphate dissolved in 100 cc aq. soln., stirred for 2 hrs., washed at 40 deg.C, dried for 5 hrs. at 80 deg.C under vacuum. An EL cell fabricated by a paste of barium titanate dispersed in cyanoethyl cellulose is screen printed on **Al** back electrode (6) as insulation layer (7), the phosphor paste with organic binder is formed as luminous layer (4).

ADVANTAGE - The thick film EL cell has no redn. of luminous area and improved **moisture proof** property. @
1/2@

L42 ANSWER 43 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1989-133597 [18] WPIX

DNN N1989-101663 DNC C1989-059137
TI Transparent **moisture-proof** packing material - comprises glass sheet laminated with sealant layers.
DC A89 L01 L03 P73 Q34
PA (NIPQ) DAINIPPON PRINTING CO LTD
CYC 1
PI JP 01077534 A 19890323 (198918)* 4p
ADT JP 01077534 A JP 1987-234075 19870918
PRAI JP 1987-234075 19870918
AB JP 01077534 A UPAB: 19930923
Packing sheet comprises a glass sheet laminated with a sealant layer.
The glass sheet is e.g. Pyrex glass, soda-lime glass, borosilicate glass, Zn borosilicate glass, etc. having a thickness = 50-200 microns. The sealant layer comprises polyester, polyamide, polycarbonate, polypropylene, polyvinyl chloride and laminated on the glass sheet with an **adhesive layer** (e.g. polyolefin **resin** modified by a carboxylic acid, polyolefin **resin** modified by a silane cpd., ionomer or partial hydrolysate of ethylene/vinyl acetate copolymer, etc.). The glass sheet is opt. surface treated by a silane coupling agent (e.g. aminosilane, vinyl silane or epoxysilane or polyolefin **resin** modified by a carboxylic acid or a silane cpd. for improving further the adhesion with the glass sheet and the **adhesive layer** and/or the sealant layer.
USE/ADVANTAGE - The sheet is usable as the outermost layer of solar cells or **electroluminescence** elements. It has substantially complete moisture-proofing performance and retains the moisture-proofing performance for a long period without including a desiccant.
0/5

L42 ANSWER 44 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1989-072356 [10] WPIX
TI Organic dispersion type **electroluminescence** panel - uses **aluminium** foil or **aluminium** laminated synthetic resin film as back electrode side **moisture-proof** film
NoAbstract Dwg 1/2.
DC A85 L03 U14
PA (DAIM) DAIMLER-BENZ AG
CYC 1
PI JP 01024394 A 19890126 (198910)* 8p
ADT JP 01024394 A JP 1987-180576 19870720
PRAI JP 1987-180576 19870720

L42 ANSWER 45 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1988-214204 [31] WPIX
DNN N1988-163375 DNC C1988-095489
TI Sintered **aluminium** nitride body for semiconductor packages - has metallised layer contg. tungsten or molybdenum, an **aluminium** cpd. and calcium oxide.
DC L03 M13 U11 U14
IN SAKANOUE, H; SASAME, A
PA (SUME) SUMITOMO ELECTRIC IND CO
CYC 5
PI EP 276788 A 19880803 (198831)* EN 27p
JP 63303881 A 19881212 (198904)
EP 276788 B1 19930113 (199302) EN 35p
DE 3877370 G 19930225 (199309)
JP 05065475 B 19930917 (199340) 15p
KR 9305894 B1 19930625 (199425)
CA 1333241 C 19941129 (199503)
US 5529852 A 19960625 (199631) 23p
ADT EP 276788 A EP 1988-101015 19880125; JP 63303881 A JP 1988-14343 19880125;

EP 276788 B1 EP 1988-101015 19880125; DE 3877370 G DE 1988-3877370 19880125, EP 1988-101015 19880125; JP 05065475 B JP 1988-14343 19880125; KR 9305894 B1 KR 1988-531 19880125; CA 1333241 C CA 1988-557216 19880122; US 5529852 A Cont of US 1988-146975 19880122, CIP of US 1990-544818 19900627, CIP of US 1991-757551 19910911, US 1994-206885 19940307
FDT DE 3877370 G Based on EP 276788; JP 05065475 B Based on JP 63303881
PRAI JP 1987-16421 19870126; JP 1987-16422 19870126; JP 1988-14343 19880125
AB EP 276788 A UPAB: 19930923
AlN sintered body has a metallised surface layer which contains: W or Mo; one or more of AlN, Al2O3 or AlON; and CaO.
Pref. the metallised layer contains (in wt.%): W or Mo 40-98; the **Al** cpd. 1-25; and CaO 1-35.
The body is prepd. by: applying a paste layer to the surface of a sintered AlN body; and firing in an inert atmos.
USE/ADVANTAGE - As a package heat sink or **airtight** cover for a semiconductor device. The layer is strongly bonded to the body with high thermal conductivity and air-tightness.
5/10

L42 ANSWER 46 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1988-094658 [14] WPIX
DNN N1988-071592 DNC C1988-042516
TI **Liquid-crystal display** element - mfd. by **coating glass** fibre polymer micro-balloons, etc. with polymer with low softening point, to form gaps for ferroelectric liq..
DC A85 L03 P81 U14
PA (SHIH) SEIKO EPSON CORP
CYC 1
PI JP 63044631 A 19880225 (198814)* 2p
ADT JP 63044631 A JP 1986-188921 19860812
PRAI JP 1986-188921 19860812
AB JP 63044631 A UPAB: 19930923
Glass fibre, polymer microballoons, glass beads or other materials used as the gap-maker for the liq.-crystal element is coated with a polymer of low softening point that softens at 200 deg.C or lower.
On one of the pair **glass base**-plates an electrode comprising ITO is formed while on the other base plate ITO electrode, an insulating layer of SiO2, and a **polyimide** layer are formed in succession and orientation treatment by rubbing is applied. Glass beads of 2 micron dia. are coated with polyvinylidene difluoride and used as the gap-makers and the periphery of the paired base plates are sealed with an acrylic adhesive. A ferroelectric liq. crystal is filled in the gap and a cell is formed. Undulation of the resultant liq.-crystal layer thickness is controlled within the range 2.00-2.25 micron.
ADVANTAGE - A liq.-crystal layer of uniform thickness is obtd. with good reproducibility.
0/0

L42 ANSWER 47 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1988-030282 [05] WPIX
DNN N1988-022663 DNC C1988-013412
TI Forming high mol. wt. **polyimide** films on a substrate - by depositing an aromatic monomer with an amino gp. and two carboxyl gps. on the substrate by evapn. under vacuum and polymerising.
DC A26 L03 P42 P73 U11
IN FUJISAKI, K; IKEDA, T; KINJO, N; MIWA, T; NUMATA, S; FUJISAKIU, K
PA (HITA) HITACHI LTD
CYC 10
PI EP 255037 A 19880203 (198805)* EN 8p
R: CH DE FR GB IT LI NL SE

JP 63159434 A 19880702 (198832)
US 4759958 A 19880726 (198832) 6p
EP 255037 B1 19921209 (199250) EN 11p
R: CH DE FR GB IT LI NL SE
DE 3782983 G 19930121 (199304)
JP 2619399 B2 19970611 (199728) 8p
ADT EP 255037 A EP 1987-110633 19870722; JP 63159434 A JP 1987-191431 19870730; US 4759958 A US 1987-76764 19870723; EP 255037 B1 EP 1987-110633 19870722; DE 3782983 G DE 1987-3782983 19870722, EP 1987-110633 19870722; JP 2619399 B2 JP 1987-191431 19870730
FDT DE 3782983 G Based on EP 255037; JP 2619399 B2 Previous Publ. JP 63159434
PRAI JP 1986-177509 19860730; JP 1987-191431 19870730
AB EP 255037 A UPAB: 19930923
A method for forming a **polyimide** film on the surface of a substrate by chemical vapour deposition comprises evaporating under vacuum at least one aromatic monomer cpd. (I) having one amino gp. and two adjacent carboxyl gps. or deriv. gps.; depositing the evaporated (I) on the substrate surface; and polymerising the deposited (I) to form a **polyimide** of formula (II) having its imide gps. unidirectionally arranged in its backbone chain. R is nil or a divalent aliphatic or aromatic gp. and n is an integer.

USE/ADVANTAGE - The process gives high strength, pinhole-free **polyimide** films of high mol.wt., and eliminates the need for precise evapn. rate control of respective monomers, as is required in previous processes. The films are useful as insulating, passivating or moistureproof protective film on a semiconductor element, orientation control films of a **liq. crystal display** element.
0/1

L42 ANSWER 48 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1986-090818 [14] WPIX
DNN N1986-066342 DNC C1986-038621
TI Sealing cell prodn., used for IC, **transistors**, liq. crystal - using compsn. of epoxy **resin** obtd. by polycondensing novolak **resin**-modified bisphenol-A or bisphenol-s epihalohydrin, and liq. epoxy.
DC A21 A85 L03 U11
PA (MITK) MITSUI TOATSU CHEM INC
CYC 1
PI JP 61036317 A 19860221 (198614)* 9p
JP 03034787 B 19910523 (199125)
ADT JP 03034787 B JP 1984-157330 19840730
PRAI JP 1984-157330 19840730
AB JP 61036317 A UPAB: 19930922
Prodn. of sealing cell is claimed by **coating adhesives** consisting of epoxy **resin**, hydrazide cpd., filler and solvent on cell basic material or cell covering material, predrying the coated layer, applying cell covering material or cell basic material to the coated layer and heating and curing the coated layer. The epoxy **resin** used consists of (a) 60-80 pts. (by wt.) epoxy **resin**, (Mn)=500-1600, obtd. by polycondensating novolak **resin**-modified bisphenol A with epihalohydrin and/or epoxy **resin** (Mn: 500-1600) obtd. by polycondensating bisphenol S with epihalohydrin and (b) 20-40 pts. liq. epoxy cpd. (Mn: 100-500).

Specifically, the **adhesives** is **coated** on the cell basic material by screen printing and the coated layer 5-500 microns thick is predried at 60-110 deg. C for 20-120 mins. The cell covering material is covered on the basic material and treated at 140-180 deg. C for 20-90 mins. to obtain the sealing cell.

USE/ADVANTAGE - The sealing cell is **airtight**, has good

thermal resistance, cold resistance and water-proofing property and is useful for sealing electric or electronic parts such as IC, **transistor** or liq. crystal.
0/0

L42 ANSWER 49 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1984-240139 [39] WPIX
DNN N1984-179716 DNC C1985-050328
TI **Liquid crystal display** element - includes **polyimide** orientation film and liquid crystal layer between **glass substrates.**
DC A85 E12 L03 P81 P85
PA (MATU) MATSUSHITA ELEC IND CO LTD
CYC 1
PI JP 59142587 A 19840815 (198439)*
ADT JP 59142587 A JP 1983-16688 19830203
PRAI JP 1983-16688 19830203
AB JP 59142587 A UPAB: 19930925
Reissued with manual codes in Week 8520
0/2

L42 ANSWER 50 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1984-003320 [01] WPIX
DNN N1984-002157 DNC C1984-001343
TI **Liquid crystal display** element mfr. - involves direct forming of transparent conductive film on **glass substrate.**
DC A85 L03 P81 P85
PA (ALPS) ALPS ELECTRIC CO LTD
CYC 1
PI JP 58199381 A 19831119 (198401)* 2p
ADT JP 58199381 A JP 1982-81594 19820517
PRAI JP 1982-81594 19820517
AB JP 58199381 A UPAB: 19930925
The element is obtd. by a method in which a paste composed primarily of an organic noble metal cpd. (e.g., of Au, Ag, etc.) is printed on a **glass substrate** and baked to form a noble metal thin film. The thin film is then subjected to a photo-etching process to form the desired shape of a transparent conductive thin film, and then a paste composed mainly of an organometal cpd. (e.g., of aluminium, silicone, indium, etc.) and an organic polymer (e.g., **polyimide**, PVA, etc.) is coated on the transparent conductive thin film in a printing process and baked to form a transparent insulating film (metal oxides).
The transparent conductive thin film (Au, Ag, etc.) can be formed directly on a **glass substrate**, and the element can be very easily mfd. at low cost with consumption of lower amts. of noble metals, and it has high durability. Also, complicated matrix wiring can be easily achieved.
0/0

L42 ANSWER 51 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1981-72637D [40] WPIX
TI **Electroluminescence** device has glass substrate, transparent electrode - electroluminescent layer e.g. contg. fluorescent material, and also an insulating layer of e.g. silica, with **moisture proof** properties.
DC L03 P85
PA (HITA) HITACHI LTD
CYC 1
PI JP 56103890 A 19810819 (198140)* 5p
PRAI JP 1980-5725 19800123

AB JP 56103890 A UPAB: 19930915
Device comprises a transparent glass substrate (I), a transparent electrode (II) formed on (I) an electroluminescent layer (III) formed on (II), a back electrode (V) formed on (III) and an insulating thin layer (IV) formed between (III) and (II) and/or (V). (IV) consists of either TiO2, SiO2, SiO, Al2O3, Y2O3, B2O3 and ZnO. The thickness of (IV) is 0.2 to 0.5 microns.
The thin layer has high **moisture-proof** properties and prevents the moisture saturation.
In an example, a transparent electrode of SnO2 is formed on a glass substrate. An electroluminescent layer (3) of fluorescent material and glass frit is formed on the electrode. A thin layer of SiO2 is sputtered onto (3). A back electrode of **Al** is formed on the SiO2 layer.

L42 ANSWER 52 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1979-65335B [36] WPIX
TI **Liq. crystal display** element prodn. - by forming transparent electrode and organic high polymer film on glass plates, rubbing film and sealing pair of plates with glass frit.
DC A85 L03 P81 P85 V07
PA (HITA) HITACHI LTD
CYC 1
PI JP 54094060 A 19790725 (197936)*
PRAI JP 1978-213 19780106
AB JP 54094060 A UPAB: 19930901
Liquid crystal display element is obtd. by forming transparent electrode and organic high polymer film (e.g. that having imide ring or quinazoline ring) on **glass base** plate having little alkali metal content, rubbing the organic high polymer film to form aligning and controlling film for liquid crystal, and sealing the circumference of a pair of the **glass base** plates, arranged at a prescribed distance so as the transparent electrodes face each other, using frit glass. Glass with small alkali metal content is e.g. quartz glass, Pyrex glass, Pykol glass, borosilicate glass, etc.
By using **glass base** plate contg. little alkali metal the heat resistance of the aligning film formed on the base plate can be improved and the combination of the formation of aligning film by rubbing with sealing by frit glass becomes possible. Consequently **liq. crystal display** element having such features as high reliability, large size, low cost,etc. can be obtd.

L42 ANSWER 53 OF 91 WPIX (C) 2003 THOMSON DERWENT
AN 1978-54368A [30] WPIX
TI electroluminescent panel prodn. - including use of poly chloro-TFE film to impart moisture resistance.
DC A85 L03 U14 X25 X26
PA (MATU) MATSUSHITA ELEC IND CO LTD
CYC 1
PI JP 53069593 A 19780621 (197830)*
PRAI JP 1976-145783 19761203
AB JP 53069593 A UPAB: 19930901
A transparent electrically conductive film (I) e.g. indium oxide is deposited on a transparent flexible resin film e.g. of polyester. An **electroluminescence** layer (II) and a reflective insulating layer (III) are then formed on (I). (II) is prepd. by dispersing fluorescent material in high-dielectric constant resin e.g. cyanoethyl cellulose. (III) is prepd. by dispersing Ba titanate powder in resin.
An **Al** film is then formed on (III) and serves as an electrode. Lead wires are bonded to the **Al** film and (I). A polychlorotrifluoroethylene (PCTFE) film (IV) is subjected to sandblast and glow discharge treatment. (IV) and a metal foil are bonded by a

polyolefin thermosetting adhesive. (IV) has excellent moisture resistance, thus electroluminescent panel is sealed in a **moisture -proof** fashion.

L42 ANSWER 54 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 2000-113990 JAPIO
TI ORGANIC EL ELEMENT AND ORGANIC **EL DISPLAY** DEVICE
IN EBISAWA AKIRA; ONIZUKA OSAMU; NAKATANI KENJI; ARAI MICHIO; ENDO HIROYUKI; KAWASHIMA MASAYUKI; HAYAKAWA TOSHIO
PA TDK CORP
PI JP 2000113990 A 20000421 Heisei
AI JP 1998-300367 (JP10300367 Heisei) 19981007
PRAI JP 1998-300367 19981007
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000
AB PROBLEM TO BE SOLVED: To provide a long-life organic EL element and an organic **EL display** device capable of being easily manufactured, excluding the effect of moisture to the utmost, reducing deterioration by aging, particularly the expansion of a nonluminescence area and the change of luminance, and capable of maintaining initial performance for a long period.
SOLUTION: This organic EL element is provided with a hole injection electrode, an electron injection electrode and an organic layer including one or more kinds of luminescence layers between these electrodes, and the electron injection electrode contains one or more kinds of an alkaline metal hydride and an alkaline earth metal hydride. The organic EL element is preferably stored in an **airtight** case, and one or more kinds of calcium hydride, strontium hydride, barium hydride and **aluminum** hydride lithium are arranged as a desiccant in the **airtight** case in no contact with the organic EL element.
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L42 ANSWER 55 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 2000-010089 JAPIO
TI INTERLAYER INSULATING FILM FOR **TFT LIQUID CRYSTAL DISPLAY**
IN EGUCHI TOSHIMASA
PA SUMITOMO BAKELITE CO LTD
PI JP 2000010089 A 20000114 Heisei
AI JP 1998-178407 (JP10178407 Heisei) 19980625
PRAI JP 1998-178407 19980625
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000
AB PROBLEM TO BE SOLVED: To make it possible to efficiently produce a **liquid crystal display** element having excellent display characteristics by using an interlayer insulating film for a **TFT liquid crystal display** formed by **sticking** a polymer **film** specified in light transmittance at a specific wavelength and specific dielectric constant on a **TFT** substrate.
SOLUTION: This interlayer insulating film 3 for the **TFT liquid crystal display** is formed by **sticking** the polymer **film** onto the **TFT** substrate 4. The thickness of the polymer film is 1 to 4 μm and the light transmissivity at the wavelength of 400 to 700 nm is required to be >=90%, more preferably >=95% in order to avoid the decrease of the transmissivity and coloration. The specific dielectric constant thereof is required to be <=3.5, more preferably <=3.0 so as to avoid the generation of a large capacitor between transparent electrodes and wiring. While films of polycarbonate, **polyether sulfone**, poly(dicyclopentadiene), polyimide, etc., are preferable as the polymer film, these films are not always restricted.
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L42 ANSWER 56 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 2000-003783 JAPIO
TI ORGANIC ELECTROLUMINESCENT DISPLAY DEVICE
IN EBISAWA AKIRA; ONIZUKA OSAMU; ENDO HIROYUKI; KAWASHIMA MASAYUKI; HAYAKAWA TOSHIO
PA TDK CORP
PI JP 2000003783 A 20000107 Heisei
AI JP 1998-181458 (JP10181458 Heisei) 19980612
PRAI JP 1998-181458 19980612
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000
AB PROBLEM TO BE SOLVED: To provide an organic electroluminescent display device capable of being easily manufactured, while eliminating as much as possible the effects of moisture or the like and capable of maintaining the initial performance for a long time, without generating deterioration with the lapse of time.
SOLUTION: An organic **EL display** device is formed by housing a hole injection electrode, an electron injection electrode, and the organic EL structure to be provided between these electrodes and having at least one or more kinds of organic layer in an **airtight** case. In this case, calcium hydroxide and/or **aluminum** lithium hydroxide is arranged in the non-contact condition in the **airtight** case with the organic EL structure.
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L42 ANSWER 57 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1999-291400 JAPIO
TI PET RESIN FILM LAMINATED STEEL SHEET WITH EXCELLENT INSULATION
IN WATANABE KEIICHI; MORI KOJI; OKUBO KENICHI; KOSHIISHI KENJI
PA NISSHIN STEEL CO LTD
PI JP 11291400 A 19991026 Heisei
AI JP 1998-114376 (JP10114376 Heisei) 19980410
PRAI JP 1998-114376 19980410
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
AB PROBLEM TO BE SOLVED: To improve water resistant adhesive properties and insulation by using a biaxially oriented **polyethylene terephthalate resin** film for a resin film, and using a two component type adhesive for specifying a glass transition temperature for an adhesive in a steel sheet obtained by laminating a resin film on the surface of the sheet via the adhesive layer.
SOLUTION: In the film laminated steel sheet applied to a member required for a high insulation, molding processability and a strength like a frame form or the like such as a **liquid crystal display** and obtained by laminating a resin film on the surface of the sheet via an adhesive layer, a biaxially oriented **polyethylene terephthalate resin** film is used as a resin film to be laminated. As a main agent of the adhesive, a two component type adhesive obtained by forming it of a polyester resin, polyurethane resin, a curing agent of trivalent or more polyvalent isocyanate and specifying a glass transition temperature to 10 to 50°C is used. Thereby a laminated steel sheet excellent respectively in the adhesive property after processing, water-resistive adhesive property and insulation property can be obtained.
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L42 ANSWER 58 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1999-283744 JAPIO
TI MANUFACTURE OF **EL DISPLAY** PANEL
IN WATANABE YUSUKE; GOTO SHOICHI; INOKUCHI KAZUHIRO
PA DENSO CORP
PI JP 11283744 A 19991015 Heisei

AI JP 1998-84430 (JP10084430 Heisei) 19980330
PRAI JP 1998-84430 19980330
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
AB PROBLEM TO BE SOLVED: To provide a **moisture-proof** structure simply by interposing an insulating film in at least a display region between two element substrates and bonding both substrates by thermocompression bonding.
SOLUTION: EL element substrates 50, 60 are formed by sequentially laminating lower electrodes 2, 12, lower insulating layers 3, 13, luminescent layers 4, 14, upper insulating layers 5, 15 and upper electrodes 6, 16 on **glass substrates** 1, 11, respectively. An insulating film 21 formed from an epoxy **resin** is arranged between the EL element substrates 50, 60 as an **adhesive layer** 20. After a first connection wire 80 is stuck to the insulating film 21 from which a nonadhesive sheet was peeled, the element substrate 50 and the insulating **film** 21 are **bonded** by thermocompression bonding from the **glass substrate** 1 side and the other surface 21b side while pressing them with a heated roller R, respectively and separately. The insulating film 21 is heated above its glass transition point and bonded on the **glass substrate** 1. After a nonadhesive sheet 23 is peeled off and a second connection wire 90 is stuck to the other surface 21b of the insulating film 21, both EL element substrates 50, 60 are laminated and fixed together by thermocompression bonding by using the roller R similarly.
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L42 ANSWER 59 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1999-231314 JAPIO
TI **LIQUID CRYSTAL DISPLAY** ELEMENT
IN HAMANAKA KENJIRO
PA MICRO OPT:KK
PI JP 11231314 A 19990827 Heisei
AI JP 1998-32651 (JP10032651 Heisei) 19980216
PRAI JP 1998-32651 19980216
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
AB PROBLEM TO BE SOLVED: To obtain a **liquid crystal display** element provided with a plane micro lens array which has a large numerical aperture(NA) and a small spherical aberration.
SOLUTION: With respect to a plane micro lens array 10, a convex lens group 12 made of ultraviolet ray-hardened **resin** having a high refractive index is formed on one face of a **base glass** 11, and a cover glass 14 is hermetically adhered to the peripheral edge of one side of the **base glass** 11, where the convex lens group 12 is formed, by a seal agent 13. As the result, an **airtight** space S is formed between the **base glass** 11 and the cover glass 14, and inert gas like dry gaseous N<SB>2</SB> or gaseous argon is enclosed in this space S or an anti- oxidation film 12a is formed on the surface of the convex lens group 12.
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L42 ANSWER 60 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1999-054643 JAPIO
TI SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF
IN MARUHASHI KENICHI
PA NEC CORP
PI JP 11054643 A 19990226 Heisei
AI JP 1997-203406 (JP09203406 Heisei) 19970729
PRAI JP 1997-203406 19970729
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
AB PROBLEM TO BE SOLVED: To realize a semiconductor device whose

high-frequency characteristic is not impaired and which is sealed with high airtightness.
SOLUTION: A semiconductor integrated circuit substrate 2 includes active elements such as **transistors** on one surface thereof and a ground conductor 3, high-frequency electrode pads 4 and bias supply electrode pads 5 on the other surface. On the other hand, a recess 6 is formed in one surface of a **silicon** substrate 1. The surface of the substrate 2 having active elements formed thereon is adhered to the surface of the substrate 1, having the recess 6 formed therein in such a manner that the active elements are accommodated in the recess 6. An atmosphere at the time the board 2 has been adhered to the substrate 1 is sealed within the recess 6, so that the active elements are sealed with high airtightness. There is no need to use a **resin** for **airtight** sealing, and thus high-frequency characteristic is not impaired by the increase in the dielectric loss of the **resin** and parasitic capacitance.
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L42 ANSWER 61 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1999-054631 JAPIO
TI SEMICONDUCTOR DEVICE AND FABRICATION THEREOF
IN YUKI AKIMASA; KO SANJU
PA MITSUBISHI ELECTRIC CORP
PI JP 11054631 A 19990226 Heisei
AI JP 1997-213028 (JP09213028 Heisei) 19970807
PRAI JP 1997-213028 19970807
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
AB PROBLEM TO BE SOLVED: To enhance flexibility of a semiconductor device by forming a passive element, an active element and an interconnection layer on a resin substrate.
SOLUTION: A silicon oxide is deposited, as an insulation film 11, on the memory part 1 and the peripheral apparatus 2 formed on a resin substrate 10, e.g. a silicon resin substrate, a **polyimide** resin substrate or a **Teflon resin** substrate. After the insulation film 11 is flattened a channel layer 21 is formed on the insulation film 11 deposited on the memory part 1 and the peripheral apparatus 2 in order to form a **transistor** part 20. Subsequently, a word line 22 is formed at a specified position followed by formation of the **transistor** part 20 at 400°C or below. Furthermore, a capacitor part 30 is formed on a bit line 23 through an interlayer insulation film layer 40 at 400°C or below, followed by formation of a wiring 50 through the interlayer insulation film 40. Consequently, a semiconductor device having a flexible structure is obtained and it can be mounted on a curved printed wiring board.
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L42 ANSWER 62 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1997-026509 JAPIO
TI ELECTRODE FILM HAVING POLARIZING FUNCTION
IN FUKUDA SHIN; YAMAZAKI FUMIHARU; FUKUDA NOBUHIRO; WAKE SUSUMU
PA MITSUI TOATSU CHEM INC
PI JP 09026509 A 19970128 Heisei
AI JP 1995-177318 (JP07177318 Heisei) 19950713
PRAI JP 1995-177318 19950713
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997
AB PROBLEM TO BE SOLVED: To increase the transmittance for light without decreasing the polarizing degree and to obtain a film having high durability which is suitable to be used for a TN, STN **liquid crystal display** element by forming a specified silicon oxide thin film layer on the principal plane of a polymer film and further forming a transparent conductive layer.

SOLUTION: This electrode film 30 having a polarizing function is obtd. by forming a silicon oxide thin film layer (B) 20 and a transparent conductive layer (C) 25 on a polymer film (A) 10 having a polarizing function and the film 30 has a structure of ABC, BABC or BAC. The silicon oxide thin film layer 20 is obtd. by heat treatment of a polysilazane. The polymer film having a polarizing function is a film generally called a polarizing film. As for the polymer film, a polyester resin such as **polyethylene terephthalate resin**, a polyamide resin such as nylon-6, nylon-12, an acryl resin such as polymethyl methacrylate resin or a polyolefin resin such as polypropylene is preferably used.
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L42 ANSWER 63 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1997-003211 JAPIO
TI RESIN COMPOSITION
IN ISHIDA KUNITERU; FUKUMOTO HIROSHI; TERABE ATSUKI; YAMAMOTO TAKASHI
PA SAKAI CHEM IND CO LTD
PI JP 09003211 A 19970107 Heisei
AI JP 1995-207739 (JP07207739 Heisei) 19950721
PRAI JP 1995-117905 19950418
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997
AB PROBLEM TO BE SOLVED: To obtain a resin composition excellent in resistance to heat discoloration and mechanical strength, and suitable for **liquid crystal display** reflective plates, telephone cards, coating material ingredients, by incorporating a resin with inorganic filler(s) with its base quantity at or lower than a specified level.
SOLUTION: This resin composition is obtained by incorporating a resin pref. a polycarbonate resin or **polyethylene terephthalate resin** with at least one kind of filler <=20μmol/g in base quantity selected from the group consisting of titanium dioxide, zinc oxide, zinc sulfide, barium sulfate, α-ferric oxide, triiron tetroxide and γ-ferric oxide.
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L42 ANSWER 64 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1996-323912 JAPIO
TI TRANSPARENT CONDUCTIVE LAMINATED FILM
IN ISHIHA AKIHIRO
PA SUMITOMO BAKELITE CO LTD
PI JP 08323912 A 19961210 Heisei
AI JP 1995-132045 (JP07132045 Heisei) 19950530
PRAI JP 1995-132045 19950530
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996
AB PURPOSE: To obtain a good **liquid crystal display** element not damaging gas barrier properties even under a high humidity atmosphere.
CONSTITUTION: An org. resin gas barrier layer is laminated on the single surface of a **polyether sulfone film** through an **adhesive layer** and a layer composed of an epoxy thermosetting resin or an acrylic ultraviolet curable resin is further formed thereon as a protective coating layer and a layer composed of an acrylic ultraviolet curable resin is provided on the other single layer of the PES film as an undercoat layer and, further, a transparent conductive layer based on indium oxide is provided thereon to form a transparent conductive plastic film. In this plastic film, the gas barrier layer is formed by laminating two or more layers respectively composed of a polyvinyl alcohol resin and an ethylene/vinyl alcohol copolymer with ethylene content of 20-50mol% and the outermost layer of the org. resin gas barrier layer is composed of an ethylene/vinyl alcohol copolymer.

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L42 ANSWER 65 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1996-114704 JAPIO
TI OPTICAL FILM
IN SHINOHARA HIRONOBU
PA JAPAN SYNTHETIC RUBBER CO LTD
PI JP 08114704 A 19960507 Heisei
AI JP 1994-277121 (JP06277121 Heisei) 19941017
PRAI JP 1994-277121 19941017
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996
AB PURPOSE: To provide an optical film which has reduced optical nonuniformity and a reduced number of its constituent films and with which a **liquid crystal display** device having a thinner shape, lighter weight and improved brightness can be obtained by subjecting one surface of the optical film to light diffusion treatment and also subjecting the other surface to light condensation treatment. CONSTITUTION: This optical film is obtained by subjecting one surface of an optical film to light diffusion treatment and also subjecting the other surface to light condensation heatment. As the material of this film, a polyester resin such as polyethylene terephthalate, etc., acrylic resin such as polymethyl methacrylate, etc., polycarbonate resin, ABS resin or the like may be used, however, in particular a thermoplastic norbomene based resin is preferably used from the viewpoint of securing the transparency, optical uniformity, heat resistance and humidity resistance of the film. By performing these treatments, the optical nonuniformity of an optical film which is used as a light-condensing sheet or light-diffusing film and consists of a polycarbonate or **polyethylene terephthalate resin** can be reduced and further, by integrating the functions as both a light-condensing sheet and a light-diffusing film, some of the optical film formation stages, such as adhesion, etc., can be eliminated and accordingly, the reduction of reliability of the film due to adhesion can be avoided.
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L42 ANSWER 66 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1994-223973 JAPIO
TI DISPERSION TYPE EL ELEMENT
IN GOTO TATSUYA; OOTA KAZUSHIGE
PA STANLEY ELECTRIC CO LTD
PI JP 06223973 A 19940812 Heisei
AI JP 1992-252981 (JP04252981 Heisei) 19920922
PRAI JP 1992-252981 19920922
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994
AB PURPOSE: To provide a dispersion type EL element having a long life and capable of being sufficiently used as the back-light of an **LCD**. CONSTITUTION: An insulating layer 3 is provided between a phosphor layer 1 dispersed with the powder of phosphors in a binder and a back electrode 2 made of an **Al** foil, and the powder of barium titanate containing chlorine is dispersed in an organic binder to form the insulating layer 3. A transparent electrode 4 is formed on a PET film 5. They are covered with water supply films 6, 7, and they are packaged with **moisture-proof** films 8, 9.
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L42 ANSWER 67 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1994-005366 JAPIO
TI **ELECTROLUMINESCENCE** LAMP
IN MORI NAOYUKI
PA NEC KANSAI LTD

PI JP 06005366 A 19940114 Heisei
AI JP 1992-157833 (JP04157833 Heisei) 19920617
PRAI JP 1992-157833 19920617
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994
AB PURPOSE: To improve an insulating layer to obtain high brightness and high efficiency by containing a high dielectric particle of barium titanate and the like having a particle diameter of 1μm or larger as well as a high dielectric particle of barium titanate and the like having a particle diameter of 0.6μm or smaller in an insulation layer.
CONSTITUTION: A high dielectric composed of a barium titanate 2a having an ordinary particle diameter and a barium titanate 2b having a small particle diameter and dispersed in an organic binder, and a phosphor dispersed in an organic binder are applied onto a back plate 1 formed of an **aluminum** foil and the like so as to form an insulating layer 2 and a luminous layer 3. An **electroluminescence** element 7 wherein a transparent electrode 4 is placed on these layers 2, 3, is sealed by **moisture-proof** outer cover films 6, 6 from the upper and lower sides directly or via hygroscopic films 5, 5. In this case, the layer 2 is formed by mixing the barium titanate having a main particle diameter of 1-2μm with 1wt.% or more and less than 50wt.% of the barium titanate having a small particle diameter of 0.6μm or smaller. Consequently, gaps between particles can be filled, a dielectric constant and reflectance of the layer 2 are enhanced, high brightness and high efficiency are obtained, and a service life is improved.

L42 ANSWER 68 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1993-343541 JAPIO
TI STRUCTURE OF SEMICONDUCTOR ELEMENT
IN OKUNO YASUYUKI
PA OKI ELECTRIC IND CO LTD
PI JP 05343541 A 19931224 Heisei
AI JP 1992-149389 (JP04149389 Heisei) 19920609
PRAI JP 1992-149389 19920609
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
AB PURPOSE: To form an element wherein it prevents that an OH group and an H group contained in an interlayer insulating film are trapped by a **transistor** part and its life is excellent by a method wherein a layer whose moisture- proofness is excellent is formed between an intermediate insulating film and the interlayer insulating film.
CONSTITUTION: A field oxide film 2 is formed on an Si substrate 1; a gate oxide film 3 and a gate electrode 4 for a **transistor** are formed; after that, an intermediate insulating film 5 is formed of a BPSG film. After that, a layer 6 whose moisture-proofness is excellent is formed on the intermediate insulating film 5. A contact hole 7 is made in prescribed parts in the **moisture-proof** layer 6 and the intermediate insulating film 5. The contact hole is filled with W; a first **Al** layer 8 is formed. After that, an O<SB>3</SB>-TEOS/PE-TEOS multilayer film is formed as an interlayer insulating film 9; a through hole 10 is made; after that, a second **Al** layer is formed. The silicon nitride film is excellently **moisture-proof**, and it is effective in stopping that an OH group or the like in the interlayer insulating film reaches the intermediate insulating film.

L42 ANSWER 69 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1993-266980 JAPIO
TI **ELECTROLUMINESCENCE** LAMP
IN NAKATSUKA KIYOHARU; TANAHASHI MASAYOSHI
PA SUMITOMO CHEM CO LTD
PI JP 05266980 A 19931015 Heisei

AI JP 1992-62248 (JP04062248 Heisei) 19920318
PRAI JP 1992-62248 19920318
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
AB PURPOSE: To provide a thin **electroluminescence** lamp excellent in electric insulating property and light emitting efficiency and having high brightness by using an **aluminum** foil with an anode oxide film of a specific electrostatic capacity attached thereto as a back electrode and an insulating layer.
CONSTITUTION: An **aluminum** foil with an anode oxide film attached thereto is laminated on a back electrode and an insulating layer, and a light emitting layer and a transparent electrode layer are laminated on the insulating layer, to be sealed with a **moisture-proof** sheath film. A film having an electrostatic capacity of 0.005-0.15μF/cm<SP>2</SP> when it is used as an electrode for an electrolytic capacitor is utilized as the anode oxide film. An intermediate layer including at least one kind of phosphoric acid, boric acid, silicic acid and chromic acid is interposed between the insulating layer and the light emitting layer. Consequently, it is possible to provide an **electroluminescence** lamp excellent in light emitting efficiency with high brightness.

L42 ANSWER 70 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1992-204631 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN SEKIKAWA KAZUE; KINOSHITA YOSHIHIRO; HADO HITOSHI
PA TOSHIBA CORP
PI JP 04204631 A 19920727 Heisei
AI JP 1990-335589 (JP02335589 Heisei) 19901130
PRAI JP 1990-335589 19901130
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1992
AB PURPOSE: To provide the **liquid crystal display** device small in weight and thickness, simple in structure and manufacture process, and adapted to enlargement in scale by using a thin substrate on one side and a rigid substrate made of glass or a material having a strength similar to glass on the other side.
CONSTITUTION: The upper substrate 1 is a film substrate made of a heat resistant **polyether-sulfone** and the lower substrate 2 is made of glass. Each of the substrates 1, 2 is parallel to and opposite to each other and each substrate 1, 2 is adjacent to each of image element electrodes 3, 4 and wirings 5 and each of orienting films 7, 8 in these order to form an XY matrix, and the liquid crystal composition 10 is held between both substrates 1, 2 by arranging spacers 11 between them and sealing and **bonding** members **coated** with **adhesives** on the surfaces on 4 sides around the XY matrix zone.

L42 ANSWER 71 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1991-266817 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN HIRAI MINORU
PA ROHM CO LTD
PI JP 03266817 A 19911127 Heisei
AI JP 1990-67960 (JP02067960 Heisei) 19900316
PRAI JP 1990-67960 19900316
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991
AB PURPOSE: To insulate and protect a transparent electrode exposure part without increasing processes by extending at least either a **glass film** or a molecule orienting film to the peripheral edge part of a transparent substrate and covering the exposed part of the transparent electrode.

CONSTITUTION: **Glass films** 6 and 7 are formed in the space C between transparent electrodes 4 and 5 and molecule orienting films 8 and 9 are formed on the top surfaces of the **glass films**. Then the **glass film** 6a is extended on the peripheral edge part 2a of a lower **glass substrate** and this extended part 6a covers the transparent electrode exposed part 4a except a connection part 4b. At the same time, the **glass film** 6' converts a transparent wiring pattern 4' except a connection part 4'. The molecule orienting film 8 on this **glass film** is made of **polyimide** resin to insulate the transparent electrode exposed part 4a and transparent wiring pattern 4' and also cut off the outside air, thereby preventing them from corroding.

L42 ANSWER 72 OF 91 JAPIO
AN 1991-185427 JAPIO
TI PRODUCTION OF **LIQUID CRYSTAL DISPLAY** BODY
IN IWAMATSU SEIICHI
PA SEIKO EPSON CORP
PI JP 03185427 A 19910813 Heisei
AI JP 1989-325033 (JP01325033 Heisei) 19891215
PRAI JP 1989-325033 19891215
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991
AB PURPOSE: To eliminate the unequal display by the fluctuation in the spacings between gap materials by photoetching a **glass film** formed on an insulating substrate in such a manner that the film remains at specified intervals and using these films as the gap materials.
CONSTITUTION: ITO electrodes 2 are formed on the surface of the **glass substrate** 1 and a **polyimide** film 3 is formed thereon. The **glass film** 4 is formed thereon. A photoresist is applied on the surface of the film 4 to form the patterned photoresists 5. The film 4 is etched with such resists as a mask to remove the resists 5, by which the gap materials 6 are formed at the specified intervals.

L42 ANSWER 73 OF 91 JAPIO
AN 1990-137922 JAPIO
TI ADHESIVE LAMINATED SHEET FOR MANUFACTURING **LIQUID CRYSTAL DISPLAY** PANEL
IN ICHIKAWA RINJIRO; HASHIMOTO KENJI
PA FUJIMORI KOGYO KK
PI JP 02137922 A 19900528 Heisei
AI JP 1988-291865 (JP63291865 Showa) 19881118
PRAI JP 1988-291865 19881118
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990
AB PURPOSE: To prevent delamination of an **adhesive layer** and to prevent a decrease in the optical properties of a base material sheet by laminating a specific **adhesive layer** and further depositing a releasable sheet on the **adhesive layer**.
CONSTITUTION: An **adhesive layer** 2 made of an alcohol soluble ultraviolet ray curable **adhesive layer** 2a or an aqueous heat curable **adhesive layer** 2b is laminated on the resin layer side of a base material sheet 1 made of a single layer sheet of resin having no solvent resistance or a plurality of layers of sheets having the resin layer as its outer layer and 30nm or less of retardation value, and a releasable sheet 3 is further laminated on the layer 2. The sheet 1 includes, for example, polycarbonate resin, **polyethersulfone** resin, polyallylene ester resin, or amorphous

polyolefin. The sheet 3 includes, for example, paper, plastic sheet, or film coated with silicon releasing agent of organopolysiloxane.
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L42 ANSWER 74 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1989-277821 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN JINGU KEIJI; WADA KEIJI
PA SEIKO EPSON CORP
PI JP 01277821 A 19891108 Heisei
AI JP 1988-108717 (JP63108717 Showa) 19880430
PRAI JP 1988-108717 19880430
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989
AB PURPOSE: To reduce the weight of the above device by using a film-like substrate for one of a pair of substrates constituting a liquid crystal cell for optical compensation.
CONSTITUTION: The **liquid crystal display** device is constituted by using the film substrate for the lower substrate 5 of the liquid crystal cell for optical compensation and a **glass substrate** for the lower substrate 5 of the liquid crystal cell for optical compensation. A nematic liquid crystal 6 twisted and oriented in the direction reverse from the direction of the nematic liquid crystal sealed in the liquid crystal cell for display is sealed therebetween. PES (**polyether sulfone**), GF (**glassy film**) or uniaxial PET (polyethylene terephthalate), etc., are used as the nonaxial film for the film substrate. The weight of the NTN type **liquid crystal display** element of a B5 size is reduced by about 23% from about 300g to about 230g.
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L42 ANSWER 75 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1989-020524 JAPIO
TI SUBSTRATE FOR **LIQUID CRYSTAL DISPLAY** PANEL
IN ICHIKAWA RINJIRO; ISHIDA TOSHIO
PA FUJIMORI KOGYO KK
PI JP 01020524 A 19890124 Heisei
AI JP 1987-177768 (JP62177768 Showa) 19870716
PRAI JP 1987-177768 19870716
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989
AB PURPOSE: To increase the adhesive strength of a base material layer to a polarizing stock film without attacking the base material layer having insufficient solvent resistance by interposing an alcohol **adhesive** agent **layer** between the polarizing stock film and the base material layer.
CONSTITUTION: The other layer is provided on one face of the polarizing stock film 1 so that the lamination constitution consisting of the polarizing stock film 1/the alcohol **adhesive** agent **layer** 2/the base material layer is obtd. The lamination constitution consisting of the base material layer 3/the alcohol **adhesive** agent **layer** 2/the polarizing stock material 1/the alcohol **adhesive** agent **layer** 2/the base material layer 3 is also possible. An adhesive agent prepd. dispersed or dissolved in an alcohol solvent is used for the **adhesive** agent **layer** 2. The base material layer 2 is laminated and constituted on non-optically rotatory transparent films or sheets which are formed of a polycarbonate resin, **polyether sulfone** resin, polysulfone resin, polyarylene ester resin or cellulose resin and have <=30nm retardation value. A film consisting of a polyvinyl alcohol/iodine system is used for the polarizing stock film 1.
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L42 ANSWER 76 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1988-271428 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN SAITO KUNIHISA; IIJIMA CHIYOAKI
PA SEIKO EPSON CORP
PI JP 63271428 A 19881109 Showa
AI JP 1987-107717 (JP62107717 Showa) 19870430
PRAI JP 1987-107717 19870430
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988
AB PURPOSE: To obtain an excellent display by using a plastic film substrate for one or both of two liquid crystal cells.
CONSTITUTION: A liquid crystal 5 used as an optical anisotropic body is inserted and held by substrates 3, 4 consisting of a **polyether sulfone** film whose thickness 50μm and formed as a liquid crystal cell (A cell). A liquid crystal 9 is inserted and held **glass substrates** of 1.1mm being electrode substrates 7, 8, and formed as a liquid crystal cell (B cell) 6 for executing a display by applying a voltage. On both sides of the A cell 2 and the B cell 6, polarizing plates 1, 10 are placed. Or the **glass substrate** of 1.1mm, and that which has executed a solvent resistance processing to the surface of a polycarbonate film substrate of 150μm thickness are used for the A call 2 and the B cell 6, respectively. Or a **polyether sulfone** film substrate of 150μm is used for both the A and B cell 2, 6. In such a way, an excellent display quality can be obtained.
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L42 ANSWER 77 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1988-142329 JAPIO
TI END SEALING MATERIAL FOR **LIQUID CRYSTAL DISPLAY** ELEMENT USING PLASTIC FILM SUBSTRATE
IN KAMOI SUMIO; MATSUKI YUMI; MATSUMOTO FUYUHIKO
PA RICOH CO LTD
PI JP 63142329 A 19880614 Showa
AI JP 1986-289277 (JP61289277 Showa) 19861204
PRAI JP 1986-289277 19861204
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988
AB PURPOSE: To obtain a suitable end sealing material for a **liquid crystal display** element by constituting the sealing material of a cured product of a specified epoxy resin with xylylenediamine or a modified product of xylylenediamine.
CONSTITUTION: An end sealing material for **liquid crystal display** element contg. a substrate comprising plastic film is constituted of a product obtd. by curing epoxy resin consisting primarily of epoxidized polyetherglycol having epoxy groups expressed by the formula I in both terminals of the molecule and having >=one -(C<SB>n</SB>H<SB>2n</SB>-O-)- residue in a molecule obtd. by the reaction with xylylenediamine or a modified product of xylylenediamine. In -(C<SB>n</SB>H<SB>2n</SB>O)-, n is 1∼5, m is 1∼25, pref. 2∼7. The epoxy resin has high **adhesion** to plastic **film** comprising polyester, polyether, **polyether sulfone**, polysulfone, polycarbonate, etc. other than fluorine contg. resin. By this constitution, an end sealing material having satisfactory adhesion, and superior resistance to liquid crystal is obtd.
COPYRIGHT: (C)1988,JPO&Japio

L42 ANSWER 78 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1987-147431 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN SUMI KOJI; IWASHITA YUKIHIRO
PA SEIKO EPSON CORP

PI JP 62147431 A 19870701 Showa
AI JP 1985-287404 (JP60287404 Showa) 19851220
PRAI JP 1985-287404 19851220
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987
AB PURPOSE: To stabilize an oriented film for a long period of time by using a **polyether sulfone** as the oriented film for orienting liquid crystal molecules on an electrode or substrate.
CONSTITUTION: The **polyether sulfone** resin is used as a material for the oriented film. A treating agent obtd. by diluting the **polyether sulfone** with an N-methyl pyrolidione from about 1wt% to 5wt% is coated by a spinner method or printing method on a **glass substrate** preliminarily patterned with ITO, SnO<SB>2</SB>, etc. The film thickness after drying is made about several 100 Angstrom. After a treating agent of **polyether sulfone** is coated on the **glass substrate**, the agent is dried in an atmosphere kept at about 100∼150°C and thereafter the surface of the substrate is rubbed several times with a fabric, etc. to end the orientation of the liquid crystal. Two sheets of the substrates obtd. in such a manner are stuck by an adhesive agent to form a **liquid crystal display** device. The orientation thereof is made uniform for a long period of time, by which the quality of the **liquid crystal display** device is upgraded.

L42 ANSWER 79 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1986-073129 JAPIO
TI MANUFACTURE OF **LIQUID CRYSTAL DISPLAY** ELEMENT
IN AKIYAMA NOBUYUKI; SAWADA KAZUTOSHI
PA ASAHI GLASS CO LTD
PI JP 61073129 A 19860415 Showa
AI JP 1984-194574 (JP59194574 Showa) 19840919
PRAI JP 1984-194574 19840919
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1986
AB PURPOSE: To prevent troubles, such as peeling of a surrounding sealing material or disconnection of transparent electrodes, by applying a polarizing plate or a reflecting plate after forming a **liquid crystal display** cell, and then, injecting the liquid crystals and sealing the cell.
CONSTITUTION: Orientation films are formed on two electrode base plates pre pared by vapor depositing ITO on **polyether sulfone** films by sputtering and subjecting it to orientation treatment. The orientation films subjected to the rubbing treatments are laid almost in parallel and opposite to each other in the rubbing directions crossing each other at right angles, and the surrounding sealing material and 'Micropearl(R)' spacers are interposed between both bases to form the liquid crystal cell. The polarizing plates available in the market **coated** with **adhesives** are applied to both bases with a laminator, the cell and the liquid crystals are placed in a vacuum apparatus, its inside is evacuated, then, gaseous N<SB>2</SB> is introduced into it, the liquid crystals are injected, and the injection opening is sealed with a urethane adhesive to obtain the **liquid crystal display** element. The pressure in the inside of the cell is not raised even by applying a pressure from the laminator to the cell, and the cell can be prevented from deformation to a large extent.

L42 ANSWER 80 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1986-040049 JAPIO

TI SEMICONDUCTOR DEVICE
IN HOSOI HIROYUKI
PA NEC CORP
PI JP 61040049 A 19860226 Showa
AI JP 1984-160465 (JP59160465 Showa) 19840731
PRAI JP 1984-160465 19840731
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1986
AB PURPOSE: To contrive to improve the **moisture-proof** property, by a method wherein a moisture detecting circuit and heating circuit are provided, and the heating circuit is driven according to the moisture, and to make penetrated water being removed by it.
CONSTITUTION: When consuming electric power is small and calorific value is small in a semiconductor device, water easily penetrates from outside. But, at this time, leak current is produced by this water between terminals A and B of a moisture detecting element (a), and the voltage of the terminal A drops. When the voltage of the terminal A drops under a prescribed value, the **transistor** Tr 1 becomes OFF condition, and an output signal (b) is generated at a terminal C. A heating circuit starts the operation by this signal. Desired calorific value is obtained at the heating circuit like this, then penetrated water to the semiconductor device can be rapidly removed, and the generation of the moisture to an **Al** wiring or **Al** electrode can be prevented.

L42 ANSWER 81 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1986-011723 JAPIO
TI MANUFACTURE OF **LIQUID CRYSTAL DISPLAY** ELEMENT
IN SAWADA KAZUTOSHI; AKIYAMA NOBUYUKI
PA ASAHI GLASS CO LTD
PI JP 61011723 A 19860120 Showa
AI JP 1984-130076 (JP59130076 Showa) 19840626
PRAI JP 1984-130076 19840626
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1986
AB PURPOSE: To form continuously liq. crystal display elements after sealing and press bonding at peripheries and to obtain efficient manufacturing stages by forming two long-sized plastic films so that the axes of polarization meet at right angle to each other.
CONSTITUTION: A long-sized polarizer of a PVA-iodine system is adhered to a **polyether sulfone** film so that the longitudinal directions coincide with each other. The 1st long-sized film 2 is obtd. The axis of polarization of the film 2 is parallel to the minor side direction of the film. Other polarizer is cut with the intervals equal to the width of a **film** and **adhered** to the **film** so that the axis of polarization is made parallel to the major side direction of the film. The 2nd long-sized film 1 is obtd. The film 1 is superimposed on the film 2 to form continuously liq. crystal display elements. When the long-sized films united to one body so that the axes of polarization meet at right angle with each other is used, the productivity can be improved because the films are continuously sent to a heating furnace.

L42 ANSWER 82 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1985-248334 JAPIO
TI MANUFACTURE OF POLARIZING FILM
IN FUJIO JUNICHI; HOSONUMA MAKOTO; NAKAMURA KATSUJI; NAKATSUKA MASAKATSU; NISHIZAWA ISAO
PA MITSUI TOATSU CHEM INC
PI JP 60248334 A 19851209 Showa

AI JP 1984-104814 (JP59104814 Showa) 19840525
PRAI JP 1984-104814 19840525
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To obtain a polarizing film that is excellent in polarizing performance and optical uniformity and will be used for a **liquid crystal display** and so on, by subjecting an unstretched film consisting of a thermoplastic resin and an optical two-tone material to shortening treatment to shorten the apparant length and stretching laterally the film forcibly at a specified draw ratio.
CONSTITUTION: An optical two-tone material (e.g. anthraquinone type two-tone dyes, etc.) is added to a thermoplastic resin (e.g. **polyethylene terephthalate resins**, etc.), and after the mixture is stirred uniformly, the mixture is melt-extruded from a T-die of an extruder, and is quenched to produce an unstretched film. After this unstretched polarizing film is subjected to shortening treatment to shorten the apparatus length thereof to a length of 80% of the actual length, it is stretched laterally at a draw ratio of 2.5 or more to produce the desired polarizing film. It is desirable that the longitudinal cross section of the unstretched film is corrugated.

L42 ANSWER 83 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1985-248333 JAPIO
TI MANUFACTURE OF POLARIZING FILM
IN FUJIO JUNICHI; HOSONUMA MAKOTO; NAKAMURA KATSUJI; NAKATSUKA MASAKATSU; NISHIZAWA ISAO
PA MITSUI TOATSU CHEM INC
PI JP 60248333 A 19851209 Showa
AI JP 1984-104812 (JP59104812 Showa) 19840525
PRAI JP 1984-104812 19840525
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To obtain a polarizing film that is excellent in durability and will be used for a **liquid crystal display** and so on, by stretching laterally an unstretched film consisting of a thermoplastic resin and an optical two-tone material and at the same time contracting the length of the film forcibly by a specified amount.
CONSTITUTION: An optical two-tone material (e.g. anthraquinone type two-tone dyes, etc.) is added to a thermoplastic resin (e.g. **polyethylene terephthalate resins**, etc.), and after the mixture is stirred uniformly, the mixture is melt-extruded from a T-die of an extruder, and is quenched to produce an unstretched film. This unstretched polarizing film is stretched laterally at a draw ratio of 2.5 or over and at the same time is contracting longitudinally forcibly by an amount of 20% or more to produce the desired polarizing film.

L42 ANSWER 84 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1985-248332 JAPIO
TI MANUFACTURE OF POLARIZING FILM
IN FUJIO JUNICHI; HOSONUMA MAKOTO; NAKAMURA KATSUJI; NAKATSUKA MASAKATSU; NISHIZAWA ISAO
PA MITSUI TOATSU CHEM INC
PI JP 60248332 A 19851209 Showa
AI JP 1984-104813 (JP59104813 Showa) 19840525
PRAI JP 1984-104813 19840525
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To obtain a polarizing film that is excellent in durability and will be used for a **liquid crystal display** and so on, by providing a forcible driving roll between a low speed roll and a high speed roll and causing a film consisting of a thermoplastic resin and an optical two-tone substance to slide on the roll surface at

the stretching temperature or more.
CONSTITUTION: An optical two-tone material (e.g. anthraquinone type two-tone dyes, etc.) is added to a thermoplastic resin (e.g. **polyethylene terephthalate resins**, etc.), and after the mixture is stirred uniformly, the mixture is melt-extruded from a T-die of an extruder, and is quenched to produce an unstretched film. This unstretched polarizing film is passed on at least one forcible driving roll positioned between a high speed roll and a low speed roll comprising a pair of pinch rolls, thereby causing the film in contact with the roll surface to slide thereon at the stretching temperature or more to produce the desired polarizing film.

L42 ANSWER 85 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1985-220317 JAPIO
TI **LIQUID CRYSTAL DISPLAY** ELEMENT
IN KUBO KIICHIRO; KANEZAKI MIKIO; TAIMA SHINOBU
PA HITACHI LTD
HITACHI DEVICE ENG CO LTD
PI JP 60220317 A 19851105 Showa
AI JP 1984-76480 (JP59076480 Showa) 19840418
PRAI JP 1984-76480 19840418
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To obtain an element superior in **moisture proof** reliability in a high-temperature environment by forming an inorganic film as a protective film on a metallic thin film wiring with respect to the **liquid crystal display** element where a semiconductor chip for driving a liquid crystal is connected directly onto the metallic thin film wiring.
CONSTITUTION: An NiCr film 12 which has a high adhesive strength to a glass of materials of a lower electrode substrate 11, where a lighting pattern is formed with a transparent conductive film 10, is formed on this substrate 11 so that a part of this film 12 is connected to the transparent conductive film 10. A Cu film 13 having a good solder-wetting property is formed on the film 12, and a double-layered film wiring 14 is formed by wiring patterning of photoetching. An inorganic film 15 consisting of an SiO<SB>2</SB>, an SiN, an **Al** <SB>2</SB>O<SB>3</SB>, or the like is formed to cover the whole of the surface and side faces of the double-layered film wiring 14 by vapor-deposition or the like, and thereafter, through holes are provided in parts to which a solder 16 should be connected. Next, the liquid crystal is sealed between the lower electrode substrate 11 and an upper electrode substrate 18 to assemble a liquid crystal cell, and a semiconductor chip 19 for driving the liquid crystal is connected to the double-layered film wiring 14 by the solder 16. The inorganic film 15 functions as a solder dam and makes the solder connection shape uniform.

L42 ANSWER 86 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1985-041021 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN TASHIRO YOSHIZO; KAMIJO YOSHIMI
PA ALPS ELECTRIC CO LTD
PI JP 60041021 A 19850304 Showa
AI JP 1983-149129 (JP58149129 Showa) 19830817
PRAI JP 1983-149129 19830817
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To enable the sticking of a polarizing plate and a reflecting plate to a cell on a curved surface and to prevent air bubbles from entering the cell from the interface by using an epoxy resin adhesive which is not chemically affected by a liq. crystal even when it contacts

with the crystal as an inner adhesive contacting with a liq. crystal layer and a nitrile rubber adhesive having high **bonding** strength to **film** substrates as an outer adhesive.
CONSTITUTION: An ITO film is formed on each **polyether sulfone** film by sputtering, it is etched to form an electrode pattern, and a polyvinyl alcohol film contg. a photosensitive agent is formed. A part of the polyvinyl ether film to be sealed is removed, and rubbing is carried out to obtain two films 1a, 1b. A pattern of a flexible one-pack epoxy resin adhesive 3 is printed on the electrode surface of the film 1b, and alumina spacers are spread. A pattern of a nitrile rubber adhesive 2 is printed on the film 1a so that it is made larger than the pattern of the **adhesive** 3. The **films** 1a, 1b are stuck together and heated, and a liq. crystal is sealed in the space between the films to assemble a flexible liq. crystal cell 7. A reflecting plate 6 and a polarizing plate 8 are stuck to the cell 7 by means of curved jigs 4, 5.

L42 ANSWER 87 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1983-125002 JAPIO
TI POLARIZING PLATE AND **LIQUID CRYSTAL DISPLAY** ELEMENT
IN HOSONUMA MAKOTO; FUJIO JUNICHI; NISHIZAWA ISAO; YAMADA YASUYUKI
PA MITSUI TOATSU CHEM INC
PI JP 58125002 A 19830725 Showa
AI JP 1982-7500 (JP57007500 Showa) 19820122
PRAI JP 1982-7500 19820122
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
AB PURPOSE: To form a polarizing plate and to extend the angle of the visual field of a liq. crystal display element by molding polyester resin blended with a dichromatic dye into a film and by stretching the film in one direction so as to make the thickness <=100μm.
CONSTITUTION: After adding 1g dichromatic dye to 1kg **polyethylene terephthalate resin** as a hydrophobic resin, they are uniformly mixed by means of a mixer, and a film is formed by an extrusion molding method. The film is stretched about 5 times at about 80°C in the longitudinal direction by means of a roll stretcher to form a polarizing plate having 50μm thickness. Transparent electrodes are formed on 2 glass substrates having 200μm thickness, and by sealing a liq. crystal in the gap between the substrates with a sealant, a display element is obtd. The polarizing plate having 50μm thickness is superposed on the element, and one side is covered with a reflecting plate. The resulting display element shows ±63° angle of visual field which is a considerably improved value in the measurement of the angle by applying DC voltage to the electrodes.

L42 ANSWER 88 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1983-052858 JAPIO
TI SEMICONDUCTOR DEVICE
IN MINAMIGUCHI YOSHIYUKI
PA NEC CORP
PI JP 58052858 A 19830329 Showa
AI JP 1981-150984 (JP56150984 Showa) 19810924
PRAI JP 1981-150984 19810924
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
AB PURPOSE: To make the semiconductor device highly reliable by a method wherein, in the high frequency semiconductor device where the semiconductor element is surrounded by wall member and the inside is covered and enclosed, the metalized layer is provided on the outer side excluding the inner side of the wall member upper surface to install the cover member.

CONSTITUTION: The **transistor** element 7 and the wall member 2 making inside of semiconductor inside **airtight** are installed on the upper surface of the insulated substrate 1 made of **aluminum** or beryllia ceramic and the leads 6 to be taken outside is installed on the under surface of said substrate 1 while the emitter, collector, base electrode of said **transistor** element 7 are lead out through the metalized layer 5 along the upper surface and sides of said substrate 1 connecting to the external take out lead 6. The upper surface of wall member 2 is formed into outside part only of the brazed and metalized layer 4 and the **airtight** fusing cover member 10. The electrode and said external take out lead 6 are connected by means of thermal fixing of the metalized layer 3 using fine metal wire 8.

L42 ANSWER 89 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1982-086819 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN KOBAYASHI SHUNSUKE; HOSOI CHIAKI; WATANABE RIYOUJI
PA NISSAN CHEM IND LTD
PI JP 57086819 A 19820531 Showa
AI JP 1980-161886 (JP55161886 Showa) 19801119
PRAI JP 1980-161886 19801119
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982
AB PURPOSE: To stabilize liquid crystals under high temperature and high humidity conditions for a long term, by using as a principal constituent a specified polyarylenepolyethersulfone resin for a film for controlling orientation of liquid crystals, and their insulating film.
CONSTITUTION: A polyarylene **polyethersulfone** resin is used as a main constituent for a liquid crystal orientation control film and an insulating film. Since this resin is noncrystalline, superior in transparency, electrical insulation, and resistance to humidity and heat, a film is formed on a **glass base** by dipping, coating, spraying, or the like, and an effect of liquid crystal orientation is raised by rubbing. Since the face of electrode formed on the base is insulated by this film, transparency and resistance to DC are enhanced. The optimum polymerization degree of this resin for durability and water resistance is 20∼200. As a solvent, methylene dichloride and chloroform are advantageously used.

L42 ANSWER 90 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1979-079560 JAPIO
TI MANUFACTURE OF ELECTRODE
IN NODA HIDEKI
PA SEIKO INSTR & ELECTRONICS LTD
PI JP 54079560 A 19790625 Showa
AI JP 1977-147521 (JP52147521 Showa) 19771208
PRAI JP 1977-147521 19771208
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1979
AB PURPOSE: To evade a punch-through of an electrode with the need of a heat treatment after electrode fitting eliminated, by making uneven a silicon surface as a contact part through ion implantation at the time of the manufacture of the electrode of an electrostatic induction **transistor** integrated circuit.
CONSTITUTION: On N<SP>+</SP>-type Si substrate 1, N<SP>-</SP>-type layer 2 is epitaxy-grown, where P<SP>+</SP>-type regions 3 and 4, and N<SP>+</SP>-type region 5 are diffusion-formed. Onto the entire surface, SiO<SB>2</SB> film 6 is adhered, an opening is provided, and each region is fitted with an **Al** electrode, but the electrode-fitted surface of each region is made uneven by implanting inert ions such as Ar. Althrough the surface of SiO<SB>2</SB> film 6 also becomes uneven, this

can be ignored actually. Next, vapor-depositing **Al** improve the **airtight** contact between **Al** and Si, an alloying heat treatment is not necessary, and no gate-drain short occurs which is caused by a punch-through of **Al**.

L42 ANSWER 91 OF 91 JAPIO COPYRIGHT 2003 JPO
AN 1979-068656 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE
IN TAKAHASHI JUN
PA CASIO COMPUT CO LTD
PI JP 54068656 A 19790601 Showa
AI JP 1977-135461 (JP52135461 Showa) 19771111
PRAI JP 1977-135461 19771111
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1979
AB PURPOSE: To improve the **adhesion** between insulation **film** and substrate and improve the transparency and direct current resistance of the display device by providing an insulation film composed of **polyether sulfone** on the electrode forming surface of substrates thereby forming the **liquid crystal display** device.
CONSTITUTION: A methanol sulution containing 1 wt% of epoxy base silane is coated over the entire electrode forming surface of a substrate 1 which comprises forming electrodes 2 of specified patterns with tin oxide, indium oxide, etc. on its surface and is then dried for about 10 minutes at about 100°C, whereby an underlying film 3 is formed. Next, the solution comprising dissolving 5 wt% of **polyether sulfone** to a mixed solvent of about 80 parts of cyclohexane and about 20 parts of dimethylformamide and further adding and mixing 25 wt% of methyl ethyl ketone is coated and is dried for about 15 minutes at about 160°C then for 15 minutes at about 400°C to form an insulation film 4, after which orientation treatment is applied after rubbing the surface through the use of a cotton cloth or the like. Next, the electrode substrates A, B having been formed in the abovementioned manner are bonded and fixed by way of a spacer 5 and liquid crystal 6 is injected and sealed therebetween, whereby the liquid crystal cell is provided.

L43 ANSWER 1 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2002-271588 [32] WPIX
DNN N2002-211380
TI Liquid coater for coating photoresist liquid onto **glass substrate**, elevates substrate along with supply head, such that liquid film on supply surface of head contacts with process surface of substrate.
DC P42 P84 U11 U14
PA (DNIS) DAINIPPON SCREEN SEIZO KK
CYC 1
PI JP 2001198513 A 20010724 (200232)* 9p
ADT JP 2001198513 A JP 2000-7759 20000117
PRAI JP 2000-7759 20000117
AB JP2001198513 A UPAB: 20020521
NOVELTY - A holder holds a substrate (W) with a process surface (Ws) facing downwards. A spin chuck (23) elevates the substrate along with a supply head (1) enclosed within a resin cup (5). The liquid film formed on supply surface (1b) of head contacts with process surface (Ws) of substrate (W) and coating liquid (R) is adhered onto the surface (Ws).
USE - For coating silica group film formation material liquid, photoresist liquid and **polyimide** resin onto substrate such as spin-on-glass (SOG) substrate, semiconductor wafer, **glass substrate** for photomask, **liquid crystal display** device and substrate for optical disk.
ADVANTAGE - The **coating** liquid is **adhered** on whole process surface of the substrate efficiently, by rotating the surfaces of the substrate. The amount of coating liquid required for coating is reduced and the production cost is reduced.
DESCRIPTION OF DRAWING(S) - The figure shows a cross sectional view of liquid coater. (Drawing includes non-English language text).
Supply head 1
Supply surface 1b
Resin cup 5
Spin chuck 23
Coating liquid R
Substrate W
Process surface Ws
Dwg.1/9

L43 ANSWER 2 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2001-619582 [72] WPIX
DNN N2001-462116
TI Storage container for accommodating glass and silicon substrates, has cassette with contaminant absorption material fixed inside recess of detachable **airtight** lid.
DC U11
PA (SONY) SONY CORP
CYC 1
PI JP 2001085507 A 20010330 (200172)* 5p
ADT JP 2001085507 A JP 1999-259078 19990913
PRAI JP 1999-259078 19990913
AB JP2001085507 A UPAB: 20011206
NOVELTY - The **plastic** container (1) has detachable **airtight** lid (5). A cassette (8) with contaminant absorption material is fixed in recess (9) of the lid (5).
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for substrate handling method.
USE - For accommodating silicon substrate used for semiconductor IC and glass substrate used for **LCD** device, etc.

ADVANTAGE - Trapping of contaminant is reliably performed, hence degradation of substrate is prevented.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective diagram of storage container, and lid in removed condition. (Drawing includes non-English language text).

Plastic container 1

Airtight lid 5

Cassette 8

Recess 9

Dwg.1/4

L43 ANSWER 3 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2001-460059 [50] WPIX
DNN N2001-341154 DNC C2001-139337
TI Heating plate for heat treatment of semiconductor wafer, has metallic foil sandwiched between thermobonding type **polyimide** films.
DC A85 L03 U11
PA (KEIH-N) KEIHIN SOKKI KK
CYC 1
PI JP 2001126851 A 20010511 (200150)* 5p
ADT JP 2001126851 A JP 1999-303870 19991026
PRAI JP 1999-303870 19991026
AB JP2001126851 A UPAB: 20010905
NOVELTY - The hot plate (5) has metallic foil (4) with specific heater pattern, sandwiched between thermobonding type **polyimide** films (3) and subjected to thermocompression bonding under vacuum.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for heating plate manufacturing method.

USE - For heat treatment of semiconductor wafer used in manufacture of semiconductor device, **glass substrate** of **LCD** panel and for precision heat treatment in industry.

ADVANTAGE - As thermobonding type **polyimide** film is provided, the heating plate does not require **adhesive layer** and eliminates air space. Mechanical strength and thermal conductivity are improved, while time for optimum and uniform heating of substrate is reduced, due to vacuum sealing of metallic foil between thermobonding type **polyimide** film.

DESCRIPTION OF DRAWING(S) - The figure shows the manufacturing process of heating plate.

Polyimide film 3

Metallic foil 4

Hot plate 5

Dwg.2/2

L43 ANSWER 4 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2001-260425 [27] WPIX
DNN N2001-185884 DNC C2001-078844
TI Epoxy resin molding materials with excellent curing characteristics, pot life and reflow resistance for soldering packaging on wiring boards without pretreatment for sealing and electronic part devices.
DC A21 A85 L03 U11 V04
PA (HITB) HITACHI CHEM CO LTD
CYC 1
PI JP 2001011158 A 20010116 (200127)* 9p
ADT JP 2001011158 A JP 1999-179746 19990625
PRAI JP 1999-179746 19990625
AB JP2001011158 A UPAB: 20010518
NOVELTY - An epoxy resin molding materials for sealing consists of (A) an epoxy resin containing components (I) and (II) in the principal chain backbone as building blocks, (B) a curative containing (b1) a compound (III), (C) a curing accelerator and (D) an inorganic filler (at least 60

vol. % per total molding material).

DETAILED DESCRIPTION - An epoxy resin molding materials for sealing consists of (A) an epoxy resin containing components of formulae (I) and (II) in the principal chain backbone as building blocks, (B) a curative containing (b1) a compound of formula (III), (C) a curing accelerator and (D) an inorganic filler (at least 60 vol.% per total molding material).

R = H or 1-10C optionally substituted monovalent hydrocarbon group; n = 0-10.

An INDEPENDENT CLAIM is also included for electronic part devices equipped with elements sealed with the epoxy resin molding materials.

USE - The epoxy resin molding materials are suitable for sealing elements for surface mounting **plastic** packages such as IC's(DIP's, PLCC's, QFP's, SOP's, SOJ's, TSOP's and TQFP's), **transistors**, thyristors, resistors, capacitors, poly switches, ball grid arrays and chip size packages.

ADVANTAGE - The epoxy resin molding materials for sealing have excellent curing characteristics, pot life and reflow resistance and enable soldering on packaging on wiring boards without certain pretreatment and electronic parts using the epoxy resin molding materials can be shipped without **moisture proof** wrapping.

Dwg.0/0

L43 ANSWER 5 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2001-172458 [18] WPIX
DNN N2001-124635 DNC C2001-052002
TI Reflection preventing film for window glass surfaces, comprises hard-coat layer and reflection preventive layer formed on transparent base sheet, and is subjected to damp-proofing.
DC L01 P81
PA (NIPQ) DAINIPPON PRINTING CO LTD
CYC 1
PI JP 2000338305 A 20001208 (200118)* 5p
ADT JP 2000338305 A JP 1999-148806 19990527
PRAI JP 1999-148806 19990527
AB JP2000338305 A UPAB: 20010402

NOVELTY - The reflection preventing film comprises a hard-coat layer and a reflection preventive layer, on a transparent base material sheet. The film is subjected to damp-proofing.

USE - Useful for surfaces of window glass, optical lens, polarizing plate used for various display devices, in word processor, computer and television, **liquid crystal display** device, transparent **plastic** sunglass lenses, spectacle lenses, camera lenses, various measuring instrument covers, and for motor vehicle, electric train, transparent boards, such as glass and **plastics**, used for mirror display on curved road, rear view mirror, and goggles.

ADVANTAGE - The reflection preventing film has **moisture proof** barrier layer formed on the reflection preventive layer. Thereby, the reflection preventing property of the film is not changed even in humid atmosphere, and for a long period of time.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the invention

Dwg.1/2

L43 ANSWER 6 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2001-159282 [16] WPIX
DNN N2001-116091 DNC C2001-047292
TI Platform for use in analyzing samples simultaneously, comprises an optically transparent substrate having a refractive index (n1), and a thin, optically transparent layer having a greater refractive index than n1.
DC A89 B04 D16 J04 S03

IN BUDACH, W E G; NEUSCHAEFER, D
PA (NOVS) NOVARTIS AG; (BUDA-I) BUDACH W E G; (NEUS-I) NEUSCHAEFER D
CYC 94
PI WO 2001002839 A1 20010111 (200116)* EN 69p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000058243 A 20010122 (200125)
EP 1192448 A1 20020403 (200230) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
KR 2002019473 A 20020312 (200262)
US 2002135780 A1 20020926 (200265)
CN 1369059 A 20020911 (200282)
ADT WO 2001002839 A1 WO 2000-EP6238 20000703; AU 2000058243 A AU 2000-58243 20000703; EP 1192448 A1 EP 2000-943983 20000703, WO 2000-EP6238 20000703; KR 2002019473 A KR 2001-716811 20011228; US 2002135780 A1 CIP of US 2000-609846 20000705, US 2002-43629 20020110; CN 1369059 A CN 2000-811268 20000703
FDT AU 2000058243 A Based on WO 200102839; EP 1192448 A1 Based on WO 200102839
PRAI GB 2000-11420 20000511; GB 1999-15703 19990705
AB WO 200102839 A UPAB: 20010323
NOVELTY - A platform for use in sample analysis comprising an optically transparent substrate having a refractive index (n1), and a thin, optically transparent layer, which is formed on one surface of the substrate, having a refractive index (n2) greater than n1, is new.

DETAILED DESCRIPTION - A new platform has incorporated corrugated structures comprising periodic grooves which define sensing areas or regions, each for capture elements. The grooves are profiled, dimensioned and oriented so that either:

(a) coherent light incident on the platform is diffracted into individual beams or diffraction orders which interfere resulting in the reduction of the transmitted beam and an abnormal high reflection of the incident light, thus generating an enhanced evanescent field at the surface of the sensing areas; or

(b) coherent and linearly polarized light incident on the platform is diffracted into individual beams or diffraction orders which interfere resulting in almost total extinction of the transmitted beam and an abnormal high reflection of the incident light, thus generating an enhanced evanescent field at the surface of the sensing areas.

INDEPENDENT CLAIMS are also included for the following:

(1) an apparatus for analyzing samples comprising a platform, for generating a light beam and for directing the beam so that it is incident upon the platform at an angle which causes evanescent resonance to occur in the platform, thus creating an enhanced resonant field in the sensing area of the platform, and for detecting a characteristic of a material disposed on or in the vicinity of the sensing area of the platform; and

(2) analyzing sample(s) by bringing the sample into contact with the sensing area of a platform, irradiating the platform with a light beam such that evanescent occurs within the sensing area of the platform, and detecting radiation emanating from the sensing area.

USE - The platform is useful in sample analysis. The process may be used in one or more of the following: gene expression, genomics, pharmacogenomics, toxicogenomics, toxicoproteomics, genetics, pharmacogenetics, toxicogenetics, exon/intron expression profiling, human leukocyte antigens (HLA) typing, analysis of splicing variants, proteomics (on-chip protein assays), patient monitoring (drug, metabolites, and markers), point-of-care personalized medicine, diagnostics, on-chip 2d

gels for proteomics, single nucleotide polymorphism mini-sequencing, high throughput screening, combinatorial chemistry, protein-protein interaction, molecular interaction, chip-based protein-antibody and peptide interaction, green fluorescent protein, in-situ hybridization, confocal microscopy, fluorescence correlation spectroscopy, conventional microscopy, and MALDI-TOF MS (mass spectroscopy) (all claimed).

ADVANTAGE - Compared with previous techniques of analyzing samples, the new method allows multiple samples to be analyzed simultaneously in an extremely sensitive, reliable and quantitative manner. Luminescence crosstalk and local light intensities are well defined, and true multiplexing is allowed. The method is simple and requires solely simple adjustment of the angle of incident light beam.

DESCRIPTION OF DRAWING(S) - The figure shows an apparatus for analyzing optical parameters and evanescent resonance condition of a platform.

glass substrate 30
grooves 31
optically transparent metal oxide layer 32
grooves 33
Dwg.2/10

L43 ANSWER 7 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 2001-015421 [02] WPIX
DNN N2001-011705
TI Optical device with protected thin optical films for **liquid-crystal display**, comprising enclosure for optical films formed by transparent plates and adhesive double-sided film.
DC P81 U14
IN CHEVALLIER, Y; LOPEZ, F G; ODILLE, N; VENENCIE, C; LOPEZ, F
PA (SEXT-N) SEXTANT AVIONIQUE; (CSFC) THOMSON-CSF SEXTANT
CYC 3
PI WO 2000034815 A1 20000615 (200102)* FR 24p
W: JP US
FR 2786882 A1 20000609 (200102)
US 6504661 B1 20030107 (200306)
ADT WO 2000034815 A1 WO 1999-FR3012 19991203; FR 2786882 A1 FR 1998-15357 19981204; US 6504661 B1 WO 1999-FR3012 19991203, US 2001-856171 20010604
FDT US 6504661 B1 Based on WO 200034815
PRAI FR 1998-15357 19981204
AB WO 200034815 A UPAB: 20010110
NOVELTY - The optical device comprises an optical structure (14) carrying a liquid crystal (22) between transparent plates (20,21) adn an adapter (7) of light radiation comprising thin optical films (17,18,19) placed in the path of light radiation (16). The optical films are placed in an enclosure (23) with dimensions (L3,L4,h1) greater than the dimensions (L1,L2,e1,E1) of the optical films for float mounting which allows independent movements of each film. The optical films are placed in the enclosure so that the thickness (e1) of each film adds to make up a total thickness (E1), and the height (h1) of the enclosure is greater than the total thickness (E1) of the optical films.

DETAILED DESCRIPTION - The light radiation (16) with that optical axis is contained within the boundaries (31,32) which define a useful section (30) of light radiation having a dimension (D1) which is less than the dimensions (L1,L2) of the optical films, wherein the differences (dD) are greater than the differences (dL) between the dimensions (L3,L4) of the enclosure (23) and the space of a protection casing (24), which is **watertight**. The protection casing comprises two transparent plates (21,25), one belonging to the optical structure (14), joined by an adhesive element (40) containing an adhesive double-sided film (33). In the second embodiment, the adhesive element is in the form of a sandwich structure formed by two double-sided adhesive films with an intermediate

substrate, which is fibreglass. The intermediate substrate is covered by a layer for a reduced adhesivity. The plates (20,21) are made of glass, and the plate (25) of e.g. glass or **plastic**.

USE - In optical devices for the modification of light radiation including diffusion, attenuation and the angle of incidence, for use in connection with **liquid crystal display** screens, and other optical devices.

ADVANTAGE - The float mounting of the optical films eliminates mechanical stresses caused by differential thermal expansion, and the casing protects the optical films from the effects of the environment.

DESCRIPTION OF DRAWING(S) - The drawing is a cross-sectional view of the device.

Adapter of light radiation 7
Optical structure 14
Light source 15
Path of light radiation, optical axis 16
Optical films 17,18,19
Transparent plates 20,21
Enclosure 23
Protection casing 24
Transparent walls 25,26
Section of light radiation 30
Boundaries of light radiation 31,32
Double-sided adhesive film 33
Adhesive element 40

Dwg.3/4

L43 ANSWER 8 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1999-223419 [19] WPIX
DNN N1999-165983 DNC C1999-065363
TI Poly silazane spray coating apparatus used as insulating film ceramics, **plastics** - has injection unit covering whole part of **airtight** receptacle which is sealed with polysilazane compound and compressed nitrogen gas.
DC A32 A85 L03 P42 U11 U14
PA (NECH-N) NE CHEMCAT KK
CYC 1
PI JP 11057543 A 19990302 (199919)* 5p
ADT JP 11057543 A JP 1997-227298 19970808
PRAI JP 1997-227298 19970808
AB JP 11057543 A UPAB: 19990518

NOVELTY - An **airtight** receptacle (3) which has poly silazane compound content liquid and compressed nitrogen gas (2) is sealed. An injection unit (5) is provided inside the receptacle such that it covers the entire receptacle and projects in top portion.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the poly silazane spray coating method.

USE - For surface protective film, insulating film used as undercoat film and orientation film of sealing agent in semiconductor device, **liquid crystal display**.

ADVANTAGE - The clogging of nozzle during spraying is prevented, and performs spray coating efficiently and economically.

DESCRIPTION OF DRAWING - The figure illustrates schematic sectional drawing of spray coating apparatus. (2) Compressed nitrogen gas; (3) **Airtight** receptacle; (5) Injection unit.

Dwg.1/3

L43 ANSWER 9 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1998-430250 [37] WPIX
DNN N1998-336039
TI Fishing lure e.g. for freshwater fishing - has buzzer and LED activated by

switching arrangement on contact with water.
DC P14 W04 W05
IN SKIRREY, G F
PA (SKIR-I) SKIRREY G F
CYC 1
PI GB 2322530 A 19980902 (199837)* 16p
GB 2322530 B 19990106 (199904)
ADT GB 2322530 A GB 1997-12814 19970619; GB 2322530 B GB 1997-12814 19970619
PRAI GB 1997-4112 19970228
AB GB 2322530 A UPAB: 19981028
The fishing lure is connected to the fishing line [1] is attached to steel wire [2] at the connecting eye [3]. The body of the lure consists of a circuit board [7] with sound emitting buzzer [8], a three pronged **transistor** [9], two resistors [10] and a light emitting diode [11], all powered by a sealed battery [12]. The lure body is **watertight** and enclosed in a **plastic** sheath [14] that extends beyond the position of the light emitting diode, and is patterned and formed to represent fish fins.

Protruding from the sheath are two wires [16] connected to positive and negative terminals. The wires ends are bared contacts [17] spaced a suitable distance so that circuit completion can be attained in the presence of water. The contacts are covered by a porous iridescent material that also encloses the lure body.

USE- fly fishing.

ADVANTAGE- Audible and visual stimulation to attract fish powered by battery in the circuit which is activated only in water. Prevents unnecessary power drain when lure is not in use.
Dwg.1/6

L43 ANSWER 10 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1997-013368 [02] WPIX
DNN N1997-011670
TI Navigational computer with chart memory for ocean-going vessels - presents information to steersman via flat panel with keyboard mounted at angle on top of steering column above compass and wheel.
DC Q24 S02 T01 W06
PA (FAHR-I) FAHRION J
CYC 1
PI DE 29617813 U1 19961128 (199702)* 24p
ADT DE 29617813 U1 DE 1996-29617813 19961014
PRAI DE 1996-29617813 19961014
AB DE 29617813 U UPAB: 19970108
The computer incorporates a monitor (18) for display of charts stored in internal or external memory as well as weather data, navigational parameters and characteristics of the ship. The monitor is set up in a **watertight** housing (17) assembled to the steering column (11) or a twin tubular support (14,15) adjacent to it. The housing is made of ozone-resistant rubber or **plastic** and the flat panel display is mounted alongside a keyboard (19) with an independent small **LCD** display (20) showing e.g. the speeds of the ship and of the wind and the depth of water. Solar glare can be excluded by a retractable visor (21) tapered towards the base.

ADVANTAGE - All relevant information for steersman can be reproduced and displayed near wheel (12).
Dwg.1/2

L43 ANSWER 11 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1996-422060 [42] WPIX
DNN N1996-355806 DNC C1996-132642
TI Fluorine-contg. **polyimide**(s) for orientation films for LC devices - give **films** with good **adhesion** to

glass substrates, thermal stability, aligning properties and high tilt angle of at least 14 degrees..
DC A26 A85 L03 P81 U14
PA (CHCC) CHISSO CORP
CYC 1
PI JP 08208836 A 19960813 (199642)* 8p
ADT JP 08208836 A JP 1995-39139 19950202
PRAI JP 1995-39139 19950202
AB JP 08208836 A UPAB: 19961021
A **polyimide** comprising a structural unit of formula (1) is new. In the formula, m = 1-3; n = 1-10 and A = tetravalent organic gp.
Also claimed are (i) **polyimides** comprising structural units of formula (1) and (4); (ii) orientation films for liq. crystals using the **polyimides**; and (iii) **liq. crystal display** devices having the orientation films. In the formulae, B= divalent organic gp.
USE - The **polyimides** are useful for orientation film materials for TN, STN and SBE liq. crystal cells.
ADVANTAGE - The **polyimide** has a high decomposition temp. of at least 360 deg. C . The orientation films have excellent **film** -forming properties, **adhesion** to **glass substrates**, thermal stability and aligning properties and a high tilt angle of at least 14 deg..
Dwg.0/1

L43 ANSWER 12 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1996-283581 [29] WPIX
CR 1996-319014 [32]
DNN N1996-238299 DNC C1996-090406
TI Novel **polyimide** suitable for LC orienting film - with high decomposition temp., good substrate adhesion and LC orienting properties, and freely controllable pre-tilt angle.
DC A26 A85 L03 P81 U14
IN KATOH, T; SUGIMORI, S
PA (CHCC) CHISSO CORP
CYC 2
PI JP 08120078 A 19960514 (199629)* 8p
US 5693379 A 19971202 (199803) 24p
US 5830976 A 19981103 (199851)
ADT JP 08120078 A JP 1994-281255 19941020; US 5693379 A US 1995-546090 19951020; US 5830976 A Div ex US 1995-546090 19951020, US 1997-906101 19970805
FDT US 5830976 A Div ex US 5693379
PRAI JP 1994-281255 19941020; JP 1994-306907 19941116
AB JP 08120078 A UPAB: 19980119
A **polyimide** comprises: (A) a unit of formula (1); and (B) a unit of formula (2) in a mol. ratio of (A)/(B) of 5-95. In formulae, R1 = 1-20C alkyl; m = 1-20; n = 1-2; and R2 = 1-20C alkyl or alkoxy.
USE - The **polyimide** is suitable for liq. crystal orienting films of **liq. crystal display** elements.
ADVANTAGE - The **polyimide** can be produced by sintering at a low temp. for a short time and has a high decomposition temp. of 350 deg. C or higher. Liq. crystal orienting films made of the **polyimide** have good adhesion to **glass base** boards and good liq. crystal orienting properties. The pretilt angle can be freely controlled in a wide range of 5-45 deg. by changing the ratio of the copolymerisation.
Dwg.1/1

L43 ANSWER 13 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1996-020700 [02] WPIX

DNN N1996-017180
TI Conductive connection structure for **liquid crystal display** and electronic printer - has copper connection foil formed on **glass substrate** with layer of super-fine silver particles which interconnects with copper foil layer on other substrate with **polyimide** base **film** via **bonding** agent.
DC P81 U14 V04
IN UCHIYAMA, K
PA (SHIH) SEIKO EPSON CORP
CYC 1
PI WO 9532449 A1 19951130 (199602)* JA 153p
JP 07530196 X 19960924 (199704)
ADT WO 9532449 A1 WO 1995-JP976 19950522; JP 07530196 X JP 1995-530196 19950522, WO 1995-JP976 19950522
FDT JP 07530196 X Based on WO 9532449
PRAI JP 1994-106475 19940520
AB WO 9532449 A UPAB: 19960122
The structure involves a copper foil connection terminal (2) formed on a substrate (3) of a glass epoxy base material, with a layer (1) of super-fine silver particles deposited on the surface of this connection terminal (2). The layer (1) is electrically connected via a bonding agent (6) with a connection terminal (4) of copper foil formed on another substrate (5) which comprises a **polyimide** base film. The layer (1) compensates for a defect of conduction of the connecting terminals and increases the contact areas of the conductive connecting portions to attain a reduction in the resistance.

USE/ADVANTAGE - Fine particle layer lessens stress imparted to connection terminals during connection. Stabilises conductive connection regions.

Dwg.1/39

L43 ANSWER 14 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1994-283518 [35] WPIX
DNN N1994-223346 DNC C1994-129436
TI Adhesive backed tape for TAB for packaging semiconductor IC - contg. organic insulating **film** and an **adhesive layer** contg. polyamide resin, epoxy resin and inorganic filler.
DC A81 G03 L03 U11
PA (TORA) TORAY IND INC
CYC 1
PI JP 06212134 A 19940802 (199435)* 8p
ADT JP 06212134 A JP 1993-5168 19930114
PRAI JP 1993-5168 19930114
AB JP 06212134 A UPAB: 19941021
Tape consists at least of an organic insulating and film (A) and an **adhesive layer** (B) formed on the surface of (A). (B) contains polyamide resin (B1), epoxy resin (B2) and insulating inorganic filler (B3) and opt. phenolic resin (B4).

Pref. (1) electroconductivity extraction water of (B3) is below 50 micron S/cm. (2) Acid components of (B1) contains ingredient 36C dicarboxylic acid.

Examples of (A) are heat resistant plastic films of **polyimide**, polyetheramide, aromatic polyamide or polyethylene terephthalate and flexible epoxy/glass cloth composite material. (B1) is pref. obtd. by reaction of hexamethylenediamine and dimer acid.

USE/ADVANTAGE - The adhesive-backed tape is suitable for packaging semiconductor IC by means of TAB system. It satisfies adhesion, insulating properties and resistance to chemicals which are required for TAB adhesives and additionally does not cause embedding of conductor even in resin sealing by transfer moulding process or heat press bonding at high temp. and pressure tape carrier packaging with mounted driver IC with

LCD glass panel.
Dwg.1/3

L43 ANSWER 15 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1994-095460 [12] WPIX
DNN N1994-074779 DNC C1994-043753
TI Transparent conductive film for **LCD** electrode or antistatic shielding - comprises poly aryl-ether sulphone **plastic** film with surface conductive coating layer, e.g. thin indium tin oxide.
DC A26 A85 L03 P73 U14 X12 X25
PA (UBEI) UBE IND LTD
CYC 1
PI JP 06044826 A 19940218 (199412)* 4p
ADT JP 06044826 A JP 1992-238778 19920724
PRAI JP 1992-238778 19920724
AB JP 06044826 A UPAB: 19940510
The transparent conductive film comprises **plastic** film on which a surface conductive coating film is formed. The **plastic** film comprises polyarylethersulphone having structure consisting of repeating units of formulae (I) and (II). The ratio of unit (I) and unit (II) is 0-70:30-100 in mol.%.

USE/ADVANTAGE - For the electrode of the **LCD** and ELD, or antistatic shielding. Transparent conductive film having no optical anisotropy and improved transparency and **moisture-proof** property is obtained.

In an example, 73.3 g of 4,4'-dichlorodiphenyl sulphone, 13.7 g of hydroquinone, and 23.2 g of 4,4'-biphenol were dissolved in 30 ml of toluene and 300 ml of N-methyl-2-pyrrolidone. 37.9 g of potassium carbonate was heated at 70 deg.C for 30 min. in N2 atmos., and then reacted with the soln. at 180 deg.C for 8 hrs. in N2 atmos., to obtain polymerised soln. 300 g of the soln. was poured into 2000 ml of ethanol to obtain polyarylether sulphone powder. The powder was made into a film of 100 microns in thickness. ITO thin film was formed on the film. Result of durability test on the film with ITO was good.
Dwg.0/0

L43 ANSWER 16 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1994-068745 [09] WPIX
DNN N1994-053622 DNC C1994-030847
TI Liq. crystal orientation **film** with improved **adhesion** - composed of tetra carboxylic acid **polyimide** resins.
DC A26 A89 L03 P81 U14
PA (MATU) MATSUSHITA ELEC IND CO LTD
CYC 1
PI JP 06018893 A 19940128 (199409)* 5p
ADT JP 06018893 A JP 1991-49527 19910314
PRAI JP 1991-49527 19910314
AB JP 06018893 A UPAB: 19940418
Film is made of a **polyimide** resin contg. hydroxide gp. in the polymer chain. Pref. **polyimide** resin is of formula (I) or (II), where A = tetravalent organic gp.; B = divalent organic gp.; C = monovalent organic gp. contg. OH gps. and n = an integral number of 10-1000.

ADVANTAGE - The **film** has improved **adhesiveness** with the **glass substrate** and less extraction with hot water.

In an example, a 20g of 4,4'-diamino-diphenyl ether was dissolved in 400ml of N-methyl-pyrrolidone; reacted for 2 hrs. at 25 deg.C with 19.6g of pyromellitic acid dianhydride; reacted for 1 hr, by adding 3.26g of 3-hydroxy phthalic acid anhydride to form a polyamide precursor; spin coated on to an ITO electrode of **glass substrate**;

predried for 30 secs. at 80 deg.C; heated for 1 hr. at 250 deg.C to form a 80nm thick **polyimide** film; rubbed to form an orientation film; then processed to form a **LC display** element by conventional method. A test of the element by impressing 5V and 60Hz rectangular wave showed that no light was transmitted at the electrode portion and the other portion was transparent.
Dwg.0/0

L43 ANSWER 17 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1993-089405 [11] WPIX
DNN N1993-067948 DNC C1993-040038
TI Compsn. for liq. crystal orientation film controlling pre tilt angle - contains **polyimide** gp. resin precursor obtd. by reacting di amine cpd. contg. bisphenol structure, aromatic di amine cpd., tetra-basic acid di anhydride and acid.
DC A26 A89 L03 P81 U14
PA (HITB) HITACHI CHEM CO LTD
CYC 1
PI JP 05034700 A 19930212 (199311)* 6p
ADT JP 05034700 A JP 1991-191508 19910731
PRAI JP 1991-191508 19910731
AB JP 05034700 A UPAB: 19931122
Compsn. contains a **polyimide** gp. resin precursor made by reacting (a) diamine cpd. contg. divalent aromatic gp. of formula (I) (where R1 and R2 are (halo)methyl or opt. substd. phenyl; R3 and R4 are monovalent hydrocarbon and/or halogen); (b) a diamine cpd. having amino gp. in benzene ring, and other amine gp. in ortho or meta position, and one methyl and/or halomethyl; (c) opt. an amine component (A) excluding (a) and (b); (d) tetra-basic-acid dianhydride of formula (II) (where X1 is tri-functionality gp. having planer structure); and (e) an acid component (B) contg. tetra-basic-acid dianhydride of formula (III) (where X2 is di-valent organic gp. and benzene gp.).
Also claimed are: liq. crystal (LC) orientation film made of the compsn.; and **LC display** element having the LC orientation **film** on the **holding** substrate and electrode opposite the LC.
ADVANTAGE - Pre-tilt angle is opt. controlled without lowering stability in the orientation film.
In an example; a compsn. was made by reacting 0.8 mol. 2,2-bis(4-amino-phenoxy) phenyl)propane, 0.2 mol. 2,6-diamino toluene, 0.5 mol. pyromellitic acid dianhydride and 0.5 mol. 3,3',4,4'-biphenyl tetra carboxylic acid dianhydride in N-methyl-2-pyrrolidone. The soln. was spin coated on a ITO transparent electrode of **glass substrate**, and heated for 1 hrs. at 250 deg. C to form a 500 Angstroms thick **polyimide** layer. It was rubbed to form a LC orientation film. Two of the substrates were set opposite the **polyimide** film and periphery was sealed by epoxy resin. It was cured for 2 hrs. at 180 deg. C. Lc of ''ALI-1132'' (RTM) was filled in it, to form a LC cell. The pre-tilt angle after heating for 1 hr. at 120 deg.C was 5.7 deg.
0/0
Dwg.0/0

L43 ANSWER 18 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1992-362082 [44] WPIX
TI Sealed field light emitting appts. e.g. as back-light for **liquid crystal display** - has anti-vibration metallic plate on back surface of light emitting element in contact with back electrode, and side surface sealed by transparent **moisture proof** film and back surface by **plastic** film NoAbstract.
DC U14 W05
PA (KANN) NEC KANSAI LTD

CYC 1
PI JP 04264388 A 19920921 (199244)* 4p
ADT JP 04264388 A JP 1991-26153 19910220
PRAI JP 1991-26153 19910220

L43 ANSWER 19 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1992-338138 [41] WPIX
DNN N1992-257986 DNC C1992-150503
TI **LCD** element having improved reliability - includes LC between substrates having polymeric orientation buffer layer formed on opposed faces having concave and convex shape.
DC A26 A85 L03 P81 U14
PA (TOKE) TOSHIBA KK
CYC 1
PI JP 04245224 A 19920901 (199241)* 6p
ADT JP 04245224 A JP 1991-11052 19910131
PRAI JP 1991-11052 19910131
AB JP 04245224 A UPAB: 19931006
Element has a pair of substrates placed at specific distance and LC inserted between the substrates. The opposed faces of the substrates have cyclic concave and convex shapes, and an orientation buffer layer formed from a polymer thin **film** is closely **adhered** on the concave and convex faces.

ADVANTAGE - The element has improved homogeneity, stability, flexibility, reliability and mass productivity.

In an example, a substrate was prepd. by lamination of a **glass substrate** (11), ITO electrode film (22) a 2000 Angstrom thick photocuring type **polyimide** orientation film (23) with concave and convex shape and a 100 Angstrom thick **polyimide** orientation buffer layer (24). Two of the substrates were set opposed and a LC (3) was inserted between the substrate to form a **LC display** element. The element had improved homogeneity.
1/2

L43 ANSWER 20 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1992-269757 [33] WPIX
DNN N1992-206179
TI Portable barometer with microprocessor and weather forecast display - incorporates memory for control program and weather data necessary for prepn. of forecast from pressure measurements.
DC S02 S03 S04 T01
IN MOCK, M; VOELLM, E
PA (UWAT-N) UWATEC AG
CYC 1
PI DE 4102923 A 19920806 (199233)* 14p
ADT DE 4102923 A DE 1991-4102923 19910131
PRAI DE 1991-4102923 19910131
AB DE 4102923 A UPAB: 19931006
In a **watertight** pref. **plastics** casing (1) a piezoresistive pressure transducer (2) with temp. compensation (3) is wired to a signal processor (5) providing digital output to a pref. program-controlled microprocessor (7) with memory (8). Clock pulses are produced by a timer (12).

A **liq. crystal display** (13) controlled by switches (15) shows e.g. barometric pressure (local and corrected to sea level), altitude with rate of climb or descent, weather outlook (sunshine, cloud or rain), and warning of two-thirds charge depletion of the battery (10).

ADVANTAGE - Better weather forecasts are available from highly accurate, reliable and shockproof device.
1/4

L43 ANSWER 21 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1991-348116 [48] WPIX
DNN N1991-266600
TI Electronic clinical thermometer in **watertight** soft flexible casing - has thermometer formed integrally with frame around inner housing, and supported by covers of upper and lower openings.
DC P31 S01 S03 S05
IN WATANABE, M
PA (CITL) CITIZEN WATCH CO LTD
CYC 4
PI EP 458420 A 19911127 (199148)*
R: DE GB NL
US 5165798 A 19921124 (199250) 7p
EP 458420 A3 19920408 (199328)
EP 458420 B1 19940824 (199433) EN 11p
R: DE GB NL
DE 69103576 E 19940929 (199438)
ADT EP 458420 A EP 1991-201247 19910527; US 5165798 A US 1991-703120 19910521; EP 458420 A3 EP 1991-201247 19910527; EP 458420 B1 EP 1991-201247 19910527; DE 69103576 E DE 1991-603576 19910527, EP 1991-201247 19910527
FDT DE 69103576 E Based on EP 458420
PRAI JP 1990-54098U 19900525
AB EP 458420 A UPAB: 19931116
A transparent inner housing (1) accommodates a circuit borad (3) and **liq. crystal display** (4) visible through a window (1a). It is fitted into the flexible casing (7) and supported on ribs (8, 9), with a thermistor (6) on the end of a wire (6a) in a flexible **plastic** tube (5) protruding from a probe (7b).

An upper cover (11) for the opening in the casing (7), and a lower cover (12) contg. a hole (12a) for the battery cap (15) are ultrasonically welded (11e, 12e) to the inner housing (1).

ADVANTAGE - Oral temp. measurements can be made safely without discomfort by instrument easily sterilised and protected against shock.
@(9pp Dwg.No.2/6)@
2/6

L43 ANSWER 22 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1991-022912 [04] WPIX
DNN N1991-017632
TI time indicator with electronic clockwork - has control unit sequentially activating display units arranged in row to show elapsed time e.g. time spent in sauna.
DC S04 S05 X27
IN FUELE, R
PA (FULE-N) FULE ELECTRONIC TRA
CYC 1
PI DE 3920036 A 19910117 (199104)*
ADT DE 3920036 A DE 1989-3920036 19890620
PRAI DE 1989-3920036 19890620
AB DE 3920036 A UPAB: 19930928
The elements of the control unit, and pref. the display units too, are accommodated in an hermetically sealed, **watertight** housing (70).
A max. of one operating element, in the form of a push-button or foil key, is provided.

The display units, arranged in a row to show, e.g. quarter hour progressions, are placed in a housing wall (77), pref. of **plastics** material, of reduced thickness. The display units can be of various colours and/or different shapes. They can be LED's, plasma discharge tubes, glow lamps or **LCDs**, transparently or reflectively driven.
Powe supply is pref. by an accumulator (72,73) chargeable by solar cells,

induction coils or capacitor.
USE/ADVANTAGE - Showing time lapsed while using sport or leisure facility, e.g. sauna. Easily read in dim light, steam, sweat or mist. Withstands corrosive effects of immediate environment, e.g. salt in steam or water. @(9pp Dwg.No.4/4)@

L43 ANSWER 23 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1985-319363 [51] WPIX
DNN N1985-237274 DNC C1985-137844
TI Covering surface of inorganic substrate with organic film - by firstly covering with silica film contg. metal oxide, then with organic film of high polarity.
DC A85 L02 L03 P73
PA (CITL) CITIZEN WATCH CO LTD
CYC 1
PI JP 60221382 A 19851106 (198551)* 3p
PRAI JP 1984-79011 19840419
AB JP 60221382 A UPAB: 19930925
Surface of inorganic substrate is preliminarily covered with SiO2 film contg. metallic oxide having high polarity, and then covered with a film of organic material having high polarity.
The inorganic substrate is pref. glass or a semiconductor substrate, and the metallic oxide having high polarity is pref. indium or aluminium oxide. The organic material having high polarity is pref. **polyimide**, polyamide, polyamide-imide, polyamide ester, **polyimide** ester or polyamide acid.
SiO2 film is pref. formed from an alcoholic soln. of tetra-alkoxysilane. Indium oxide or aluminium oxide is pref. formed from trialkoxy-indium or trialkoxyaluminium, and is used in an amt. above 1 mol% (pref. more than 5 mol%) on SiO2.
USE/ADVANTAGE - **Glass substrate** for **LCD** panel, and semiconductor substrate for IC are covered with insulating film of organic substance having high polarity such as **polyimide** and polyamide. The organic **film** is **adhered** firmly to the inorganic substrate with improved strength.
0/0

L43 ANSWER 24 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1983-718927 [30] WPIX
DNN N1983-129015 DNC C1983-069802
TI Electrode substrate for electro-optics - obtd. by orienting a film obtd. by coating mixt. of silanol oligomer and organic-macromolecular material on substrate.
DC A23 A85 L03 P81 U11 U14
PA (HITA) HITACHI LTD
CYC 2
PI JP 58033217 A 19830226 (198330)* 8p
US 4469409 A 19840904 (198438)
JP 62035094 B 19870730 (198734)
ADT JP 58033217 A JP 1981-130253 19810821; US 4469409 A US 1982-409058 19820818
PRAI JP 1981-130253 19810821
AB JP 58033217 A UPAB: 19930925
New electrode substrate (I) comprises a film formed through orientation process after coating a mixt. of silanol oligomer formed by denaturation of silane contg. 1-8C alkyl or aromatic ring, and organic macromolecular material (II) to a substrate which can be used for (I), and drying the mixt.
The purpose of (I) is to provide a **liq. crystal display** element which can improve the heat resistance of orientation control **film** and the **adhesiveness** to the

glass substrate, without installing a base film.

Pref. the reflective (sec) index of the orientated film is 1.65-1.85. (II) is polyamide acid forming polyamide due to cycloreaction. (II) is one selected from soluble aromatic polyamide, aromatic polyetheramide and aliphatic polyamide. (I) is partic. an electrode substrate for the indicating element of the twist-nematic liq. crystal type.

L43 ANSWER 25 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1983-712422 [29] WPIX
DNN N1983-124059
TI Waterproof electronic watch with bracelet - has transparent block containing **liquid crystal display** unit retained between metal casing halves.
DC S04
IN VANOVER, W
PA (TEXT) TEXTRON INC
CYC 4
PI DE 3228370 A 19830714 (198329)* 17p
GB 2112549 A 19830720 (198329)
FR 2519159 A 19830701 (198331)
AU 8286625 A 19830630 (198333)
PRAI US 1981-334448 19811224
AB DE 3228370 A UPAB: 19930925
The electronic wristwatch with a **watertight** block (14) which is secured inside a metal casing made in two sections (36,38) to which the two ends of the bracelet are attached, has the block made of transparent **plastics** material, with a metal baseplate (16) secured by screws (28). The block has stepped ends forming recesses (48) into which the spindles (4b) for the bracelet connection are located, and straight sides. A projecting zone (14c) forming the watch face, fits into a rectangular opening in the upper section (36) of the casing.

The interior of the block is also stepped, forming a larger and smaller chamber, with a sealing strip (22) fitting into a groove around the bottom edge of the block, held in place by the metal baseplate. The two chambers house the liquid crystal time indicating unit and other components. Between the block and housing there is included a leaf spring. 5/18

L43 ANSWER 26 OF 46 WPIX (C) 2003 THOMSON DERWENT
AN 1983-28855K [12] WPIX
DNN N1983-051802 DNC C1983-028280
TI Liq. crystal aligning film prodn. - by applying alignment film soln. to surface of baseplate, holding in solvent (vapour) to form thin film of solute and aligning.
DC A89 L03 P81
PA (MATU) MATSUSHITA ELEC IND CO LTD
CYC 1
PI JP 58025616 A 19830215 (198312)* 2p
PRAI JP 1981-124299 19810808
AB JP 58025616 A UPAB: 19930925
Method comprises applying a molecule aligning film soln. (e.g. dimethylformamide soln. or dimethylacetamide soln. of **polyimide** system aligning film material) to the surface of a base plate (e.g. **glass base** plate) having an electroconductive **film** pattern, **holding** the base plate in a solvent, or vapour of the solvent, (e.g. freon which is miscible with the solvent of the aligning film soln. and has no dissolving power to the solute, to form a thin film consisting of the solute (**polyimide** system material) on the surface of the base plate; and subjecting the thin film to aligning treatment to form a liq. crystal molecule aligning film.

Liq. crystal aligning film useful for making **LCD** panels can

be effectively mass-produced by simple appts. without requiring vacuum plating appts., etc.

L43 ANSWER 27 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1999-223819 JAPIO
TI PRODUCTION OF **LIQUID CRYSTAL DISPLAY** DEVICE
IN SHISHIDO TOMOKO; SUGIYAMA HITOSHI; SAWADA MASAHITO
PA TOSHIBA CORP
PI JP 11223819 A 19990817 Heisei
AI JP 1998-27391 (JP10027391 Heisei) 19980209
PRAI JP 1998-27391 19980209
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
AB PROBLEM TO BE SOLVED: To fix a spacer in a specified region between substrates by laminating two substrates with a spacer interposed inbetween to face their electrodes to each other and injecting a liquid crystalline compsn. into the gap between the laminated two substrates.
SOLUTION: After a wiring part 32, a **transistor** part and a transparent electrode part 33 are formed on the surface of one **glass substrate** 31, a liquid crystal orientation film 34 comprising a **polyimide** is formed all over the surface. The a UV-curing **adhesive layer** 35 is selectively irradiated with UV rays through the openings of a mask 38. In this process, the adhesion property of the **adhesive layer** 35 to the orientation film 34 is lost in the region irradiated with UV rays. Then the whole surface is irradiated with UV rays to harden the residual **adhesive layer** 35 to form a spacer 40 on the orientation film 34 corresponding to the wiring part 32 and the **transistor** part. The other substrate is stacked in such a manner that the alignment film of the other substrate is in contact with the spacer 40 and that a sealing agent is applied around the substrate, then the two substrate are laminated by pressurizing. A liquid crystal is injected into the gap between the two **glass substrates** 31.
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L43 ANSWER 28 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1998-301105 JAPIO
TI **LIQUID CRYSTAL DISPLAY** POLARIZING PLATE AND **LIQUID CRYSTAL DISPLAY** DEVICE
IN KOTSUBO HIDESHI; KITANO TETSUO; SAKURAI MAKOTO; MATSUSE TAKAHIRO; MORIMURA YASUHIRO
PA BRIDGESTONE CORP
PI JP 10301105 A 19981113 Heisei
AI JP 1997-128049 (JP09128049 Heisei) 19970501
PRAI JP 1997-128049 19970501
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998
AB PROBLEM TO BE SOLVED: To prevent the warpage of a **liquid crystal display** device as much as possible by laminating **plastic** barrier film which is transparent and has moisture barrier performance and whose glass transition temperature is equal to or above a specified value on the surface of a polarizing plate.
SOLUTION: The polarizing plate 10 is constituted by laminating the **plastic** barrier film 14 on either protective film 11a of polarizing film 12 coated and protected with/by the protective films 11a and 11b through an adhesive layer 13. Then, the **plastic** barrier film 14 laminated is transparent and has the moisture barrier performance, and for instance polyester film and polystyrene film or the like whose glass transition temperature is >=60°C are used. Also, the **plastic** barrier film 14 whose moisture permeability is <=500 g/m<SP>2</SP>.24 hours and is specially desirably <=10 g/m<SP>2</SP>.24 hours may be used. Thus, the polarizing plate 10 is restricted, and is made **moisture-proof**, so that the warpage of a cell

substrate and a whole **liquid crystal display** device caused by the expansion and shrinkage of the polarizing film 12 is prevented as much as possible.

L43 ANSWER 29 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1998-265570 JAPIO
TI NEW **POLYIMIDE** AND TETRACABOXYLIC DIANHYDRIDE
IN KATO TAKASHI; SATO HIDEO; MURATA SHIZUO
PA CHISSO CORP
PI JP 10265570 A 19981006 Heisei
AI JP 1997-87526 (JP09087526 Heisei) 19970321
PRAI JP 1997-87526 19970321
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998
AB PROBLEM TO BE SOLVED: To obtain a polymide capable of expressing excellent **film** formability, excellent **adhesivity** to **glass substrates**, excellent thermal stability, excellent liquid crystal orientation and high electric voltage retention and useful for liquid crystal cells for thin film **transistors**, etc., by introducing specific structural units having cyclobutane rings.
SOLUTION: A polyamic acid as the precursor of the **polyimide** has a weight- average mol.wt. of 5000-500000. The **polyimide** comprises (S<SB>1</SB>) structural units of formula I [A is a divalent organic group; X is H, a (halogenated) alkyl, an alkoxy, a haogen, cyano, phenyl, a cycloalkyl] preferably in an amount of >=5 mol.% and (S<SB>2</SB>) structural units of fomrula II (B is a tetravalent organic group). The **polyimide** is obtained by reacting compounds of formulas III and IV with a compound of formula V in a solvent and subsequently heating the obtained polyamic acid.

L43 ANSWER 30 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1998-123522 JAPIO
TI SUBSTRATE FOR **LIQUID CRYSTAL DISPLAY** ELEMENT
IN EGUCHI TOSHIMASA; ITO HISASHI
PA SUMITOMO BAKELITE CO LTD
PI JP 10123522 A 19980515 Heisei
AI JP 1996-277812 (JP08277812 Heisei) 19961021
PRAI JP 1996-277812 19961021
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998
AB PROBLEM TO BE SOLVED: To improve transmittance and to obtain a bright **liquid crystal display** element by forming oriented films to film thicknesses of specific values and providing these oriented films with an antireflection effect.
SOLUTION: The oriented film is formed by printing the surface of a **glass substrate** with a liquid crystal orienting agent which is a **polyimide** soln. and calcining the substrate. The film thickness D of the oriented film is controlled by adjusting the printing conditions of the orienting agent. The oriented film is provided with the antireflection effect by forming the oriented film in such a manner that its **film** thickness D **holds** the relation λ/4n×0.9<=D<=λ/4n×1.1 with respect to the wavelength λ desired to be prevented of refractive index and the refractive index (n) of the oriented film and attains <=1000 angstrom. More preferably, the relation is λ/4n×0.95<=D<=λ/4n×1.05 and the case D=λ/4 holds is most preferable. The prevention of the refection is no longer possible if the film thickness D of the oriented film is λ/4n×0.9>D or D>λ/4n×1.1.

L43 ANSWER 31 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1996-208836 JAPIO
TI **POLYIMIDE** CONTAINING FLUORINE
IN SUGIMORI SHIGERU; KATO TAKASHI
PA CHISSO CORP
PI JP 08208836 A 19960813 Heisei
AI JP 1995-39139 (JP07039139 Heisei) 19950202
PRAI JP 1995-39139 19950202
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996
AB PURPOSE: To obtain a **polyimide**, comprising a specific structural unit, having a high decomposition temperature, usable at high temperatures, suitable for providing a liquid crystal oriented **film** excellent in **adhesion** to a **glass substrate** and liquid crystal orienting properties and useful as a material for the liquid crystal oriented film such as a liquid crystal cell for (super)twisted nematic **liquid crystal display** elements.
CONSTITUTION: This **polyimide** comprises a structural unit of formula I [A is a tetravalent organic group; (m) is 1-3; (n) is 1-10] or structural units of formulas I and II (B is a bivalent organic group). The **polyimide** comprising the structural unit of formula I is obtained by reacting, e.g. a compound of formula III (e.g. 1H,1H-heptafluoro-1-butyl 3,5-diaminobenzoate) with a compound of formula IV (e.g. pyromellitic anhydride) in a solvent, producing a polyamic acid and heating the resultant polyamic acid.
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L43 ANSWER 32 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1993-273570 JAPIO
TI **LIQUID CRYSTAL DISPLAY** DEVICE AND ITS PRODUCTION
IN TAKEI SHOTARO
PA SEIKO EPSON CORP
PI JP 05273570 A 19931022 Heisei
AI JP 1992-66998 (JP04066998 Heisei) 19920325
PRAI JP 1992-66998 19920325
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
AB PURPOSE: To prevent the misalignment of connecting terminals between the respective terminals by forming a heat press contacting tool to a gently curved shape and more strongly crushing the press contacting state of the outer terminal than the central part, thereby attaining a strongly connected state.
CONSTITUTION: After an anisotropic conductive **adhesive film** is tentatively press contacted to the terminal electrodes of a substrate mounted with an IC for driving, the terminal electrodes are aligned to the terminal electrodes of a **glass substrate** constituting a **liquid crystal display** panel.
The terminal electrodes are then sufficiently aligned and thermally press contacted by using the press contacting tool 11. The press contacted surface 12 of the press contacting tool 11 is formed to the gently curved shape so as to draw the curve increasing gradually from the center of the press contacting tool 11 toward the outer side. The press contacted surface 12 is brought into contact with the materials to be press contacted more strongly on the outer side by constituting of the press contacted surface 12 of the press contacting tool 11 in such a manner. In addition, the outer sides are held by the press contacting tool 11 and an imposing base earlier than the central part, and therefore, the fixing is executed early. As a result, the elongation of a **polyimide** tape is lessened.
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L43 ANSWER 33 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1992-124601 JAPIO
TI POLARIZING PLATE
IN KAWAGUCHI MASAAKI; OSHIMA NOBUO; NAGATSUKA TATSUKI; SHIYOUDA TAKAMORI
PA NITTO DENKO CORP
PI JP 04124601 A 19920424 Heisei
AI JP 1990-245779 (JP02245779 Heisei) 19900914
PRAI JP 1990-245779 19900914
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1992
AB PURPOSE: To eliminate an abnormal display on liquid crystal due to the electrostatic sticking of dust, the disorder of liquid crystal orientation, etc., by providing transparent conductive layers on one or both sides of a polarizing film.
CONSTITUTION: A transparent conductive layer 2 is formed on one surface of a transparent **plastic** film for forming a transparent protection layer 3 and a **moisture-proof** layer 4 is formed on the other surface; and **plastic** films like this are adhered to both surfaces of the polarizing film 5 with their **moisture-proof** layers 4 in by using adhesives. This transparent conductive layer 2 cuts off static electricity and an electromagnetic wave and prevents cohesive layers from being stained electrostatically and the liquid crystal from making an abnormal display, thereby preventing a **liquid crystal display** device from malfunctioning owing to an electromagnetic wave.
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L43 ANSWER 34 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1990-219026 JAPIO
TI METHOD OF FORMING LIQUID CRYSTAL ORIENTATED FILM AND **LIQUID CRYSTAL DISPLAY** DEVICE
IN NAWA KAZUNARI
PA SUMITOMO METAL IND LTD
PI JP 02219026 A 19900831 Heisei
AI JP 1989-41039 (JP01041039 Heisei) 19890220
PRAI JP 1989-41039 19890220
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990
AB PURPOSE: To improve the reproducibility of liquid crystal molecule orientation and to facilitate the formation of the orientated **film** by **sticking** a thin **film** of an orienting agent on a substrate, blowing gas to this thin film, and performing orientation processing.
CONSTITUTION: The ITOs of transparent conductive films 12 are formed on two **glass substrates** 11, and the **glass substrates** 11 are dipped into a 4% solution of the orienting agent, e.g. **polyimide** and then lifted vertically to form thin films (orientated film 13) of the orienting agent. Then the compressed gas, e.g. compressed nitrogen is blown to the **glass substrates** 11 in the opposite direction from the lifting direction and the **glass substrates** 11 are prebaked and then postbaked. Electrodes are formed and glass beads as spacers are atomized; and then the two **glass substrates** 11 are adhered with ultraviolet-ray setting resin so that their blowing directions of the compressed gas cross each other at right angles, and liquid crystal is injected lastly. A polarizer 15 is adhered on the liquid crystal cell which is thus manufactured. Consequently, the orientated film which has the high reproducibility of the orientation of liquid crystal molecules is formed and a display irregularity on the **LCD** is eliminated.
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L43 ANSWER 35 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1990-197071 JAPIO

TI THIN FILM EL PANEL
IN YAMASHITA TAKURO; OGURA TAKASHI; NAKAYA HIROAKI; YOSHIDA MASARU
PA SHARP CORP
PI JP 02197071 A 19900803 Heisei
AI JP 1989-17085 (JP01017085 Heisei) 19890126
PRAI JP 1989-17085 19890126
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990
AB PURPOSE: To increase the reliability by arranging a moisture absorbent sheet made up by dispersing moisture absorbent powder on an organic powder sheet between a thin film EL(**electroluminescence**) device and the **moisture-proof** sheet and surface-adhering the moisture absorbing sheet to the film EL device.
CONSTITUTION: A heat-sealable **plastic** film 13 and a moisture absorbing sheet 14 are arranged on an EL device 1. After a **moisture-proof** sheet 18 covers the device 1 such that a space 19 is formed between the **moisture-proof** sheet 18 and the device 1, its circumferential portion is adhered to a translucent substrate with epoxy resin so that it can be closely sealed. The sheet 14 is made up by dispersing such moisture absorbent powder as silica fine powder, etc., to an organic polymer sheet. There is inevitably a possibility that a very small amount of moisture may remain in a product during the work and moisture may permeate into the product through a junction, etc., during the operation for a long time. The moisture absorbing sheet is provided so that such moisture can be absorbed. The effect of such absorption can be increased by surface- adhering the sheet 14 to the device 1.

L43 ANSWER 36 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1988-123024 JAPIO
TI **LIQUID CRYSTAL DISPLAY** ELEMENT
IN URABE KYOICHI
PA FUJI ELECTRIC CO LTD
PI JP 63123024 A 19880526 Showa
AI JP 1986-269003 (JP61269003 Showa) 19861112
PRAI JP 1986-269003 19861112
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988
AB PURPOSE: To maintain the distance between an upper and lower substrate at a fixed value and to prevent generation of defect in a picture image by arranging a lower substrate provided with line electrodes to face oppositely to an upper substrate provided with picture electrodes and row electrode, and providing spacers arranged dispersedly on the row electrodes on the upper substrate.
CONSTITUTION: Picture element electrodes 32 and line electrodes 33 are formed on a glass upper substrate 1 using transparent conductive film consisting of tin oxide/indium oxide. Further, two thin film diodes 8 serving as nonlinear element are connected antiparallelly to between both electrodes 32, 33. After coating the surface of the worked **glass substrate** with **polyimide** resin soln. by the relief printing process, coated film having 800∼1,000Å thickness is formed after heat-treating and rubbing the surface with cotton cloth, etc. in the fixed direction. Then, just 0.1g spacer 73 prepd. by cutting glass fiber having almost equal diameter as the distance between substrates (ca.10μm) into ca.20μm are dispersed in 100g epoxy resin soln. and printed on the line electrode 33 by the relief printing method to form by heating a patternized coating film. By this method, the spacers 73 are dispersed on the line electrodes 33 interposing a spacer **holding layer** 9 comprising epoxy resin, and fixed.

L43 ANSWER 37 OF 46 JAPIO COPYRIGHT 2003 JPO

AN 1987-163019 JAPIO
TI **LIQUID CRYSTAL DISPLAY**
IN HOSHIKAWA JUN
PA SEIKO EPSON CORP
PI JP 62163019 A 19870718 Showa
AI JP 1986-4476 (JP61004476 Showa) 19860113
PRAI JP 1986-4476 19860113
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987
AB PURPOSE: To improve the display quality of a **liquid crystal display**, making a non-display part which generates by drawing an electrode practically in a quiet way by disposing upper and down-wards conductive parts in an effective display area of the titled device in which the prescribed upper and down wards conductive parts electrically connect to the terminal part, a common electrode which is formed on the substrate facing to the substrate having the terminal part thereon to connect it to the outer driving circuit.
CONSTITUTION: The X electrode 3 and the Y electrode 4 are formed by vapor-depositing the ITO film on the **glass substrate** 1 and then, by effecting a photolithography. The surface of the obtd. electrode is coated with a **polyimide** resin by a spinner method, followed by baking it and then by rubbing it to effect an orientation treatment. And then, epoxy **adhesives** are **coated** by a screen printing on a surface of the substrate, and an another surface thereof is coated with the epoxy adhesives by a screen-printing method, and then glass fiber chips are scattered on the substrates respectively as a spacer. The obtd. two substrates are laminated with each other followed by heating it under a pressure to cure the sealing agent, and the upper and down-ward conducting agent. And then, the liquid crystal substance is poured between the obtd. substrates followed by sealing an inlet of the liquid crystal with the epoxy type adhesives curable at a room temp. A polarizing plate 8 is sticked on both surfaces of the liquid crystal cell respectively to form the titled element.

L43 ANSWER 38 OF 46 JAPIO
AN 1987-083720 JAPIO
TI **LIQUID CRYSTAL DISPLAY** ELEMENT
IN IKEZOE MITSUNORI; OGASAWARA YOSHIYA
PA DAINIPPON INK & CHEM INC
PI JP 62083720 A 19870417 Showa
AI JP 1985-224117 (JP60224117 Showa) 19851008
PRAI JP 1985-224117 19851008
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987
AB PURPOSE: To improve the adhesion by injecting a liq. sealant consisting of polymerizable acrylic sirup having hydroxyl groups, a multifunctional oligoester compound, a photopolymn. initiator, a photosensitizer and other additives into the gap between substrates and by irradiating active energy beams to cure the sealant and to seal the substrates.
CONSTITUTION: The liq. sealant consisting of polymerizable acrylic sirup prepd. from an alkyl (meth)acrylate and a polymerizable unsatd. compound having a hydroxyl group and of a multifunctional oligoester compound having three or more (meth)acryloyloxy groups per one molecule or hurther contg. the photopolymn. initiator, the photosensitizer and other additives is injected into the gap between substrates, and active energy beams are irradiated to cure the sealant and to seal the substrates. Thus, the liq. crystal or a liq. crystal mixture is protected from the external environment contg. moisture, the internal structure is kept **airtight**, and even when transparent **plastic** films are used as the substrates, effective sealing can be attained.

L43 ANSWER 39 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1987-040638 JAPIO
TI OPTICAL HEAD
IN IKEGAME TETSUO; KARASAWA TADAO
PA OLYMPUS OPTICAL CO LTD
PI JP 62040638 A 19870221 Showa
AI JP 1985-180155 (JP60180155 Showa) 19850816
PRAI JP 1985-180155 19850816
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987
AB PURPOSE: To prevent effectively deformation of size of distortion due to moisture absorption even under high humidity condition by constituting the component of an optical head with a **plastic** molding and applying **moisture proof** processing to the surface.
CONSTITUTION: The optical system including a **laser diode** 1 or the like, an actuator 5 and an optical head main body 10 supporting a photodiode 9 are made of **plastic** molding. Further, a support frame 31 of a **laser diode**, a sleeve 32 of a collimate lens 2 and a case 33 of the actuator 5 are made of a **plastic** molding and fluororesin films 34, 35, 36, 37, 38 are coated to the surface of the components. Since the fluororesin film has no moisture absorption, no deformation of size nor distortion takes place even when an optical head is used under high moisture condition and the optical performance is kept stably over a long period.

L43 ANSWER 40 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1986-214443 JAPIO
TI SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF
IN MAEDA YUKIO
PA MATSUSHITA ELECTRIC IND CO LTD
PI JP 61214443 A 19860924 Showa
AI JP 1985-54941 (JP60054941 Showa) 19850319
PRAI JP 1985-54941 19850319
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1986
AB PURPOSE: To protect a pattern forming plane from a damage and to obtain the sufficient moisture-resistant effect by opposing the pattern forming plane of a semiconductor chip to a conductor pattern plane of a substrate and effecting the sealing of the semiconductor chip and the bonding of the chip to the substrate with a sealing resin.
CONSTITUTION: At first, a semiconductor chip 1 is bonded to an internal electrode of a film carrier 2 using a **polyimide** film 3 as a base material and the primary sealing resin 7a of liquid silicon is spread thinly over a surface of the semiconductor chip 1 while preventing the resin from infiltrating between the internal electrodes then it is cured. Either of external electrodes 5 of the film carrier 2 is bonded to a **glass substrate** 4 of **liquid crystal display** by an adhesive. The secondary sealing resin 7b of liquid silicon which is the same as of the primary sealing resin is applied to the position for mounting the semiconductor chip 1 on the surface of a glass epoxy substrate 6, after which the semiconductor chip 1 **bonded** to the **film** carrier 2 is rapidly overlapped on that followed by the gentle and soft pressing so as to push up the secondary resin from between the internal electrodes.

L43 ANSWER 41 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1985-146228 JAPIO
TI **LIQUID CRYSTAL DISPLAY** ELEMENT
IN TAKIGUCHI YASUYUKI
PA RICOH CO LTD
PI JP 60146228 A 19850801 Showa

AI JP 1984-3216 (JP59003216 Showa) 19840110
PRAI JP 1984-3216 19840110
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To raise a high **airtight** property and a resistant to a high temperature and a high humidity by sealing the outside circumference of a substrate by plural sealing layers, and enclosing a liquid crystal into an air-gap part between plural sealing layers.
CONSTITUTION: In the inside of the outside circumference sealing layer 5, another sealing layer 6 is provided along the outside circumference sealing layer 5, and a liquid crystal 4' is enclosed into an air-gap part of the sealind layers 5, 6, too. By only forming the sealing part by a double structure, invasion preventing effect of impurities and a preventive effect of leakage of the liquid crystal are improved, and also an invasion of an air foam can also be prevent- ed since no air exists in the air-gap part. As for a substrate 1, a **plastic** film is desirable, and as for an adhesive agent for the sealing layers 5, 6, a silicon compound adhesive agent is desirable in respect of an adhesive property, a resistance to a liquid crystal, and a screen printing property to a polyester substrate.

L43 ANSWER 42 OF 46 JAPIO
AN 1985-108822 JAPIO
TI TERMINAL CONNECTING METHOD OF **LIQUID CRYSTAL DISPLAY** ELEMENT
IN NAKANOWATARI JUN; MACHIDA MITSUO
PA ALPS ELECTRIC CO LTD
PI JP 60108822 A 19850614 Showa
AI JP 1983-216338 (JP58216338 Showa) 19831118
PRAI JP 1983-216338 19831118
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AB PURPOSE: To improve the tensile strength of a connector by coating a transparent electrode, which is exposed from a liquid crystal cell to the outside, with an insulating film except a part coated with a silver electrode and subjecting the silver electrode to electroless plating with nickel thereafter and performing soldering from above.
CONSTITUTION: An ITO film 2 is formed on a **glass substrate** 1 and is patterned by etching, and thereafter, an SiO<SB>2</SB> film 3 is formed on the ITO film 2 except a terminal part by a mask vapor-deposition method. A silver electrode thick **film paste** is applied to the terminal part by the screen printing method and is sintered to form an electrode 4. The silver electrode 4 is subjected to electroless plating with nickel to form a uniform nickel film 8. After preparatory soldering of this electrode, a flexible substrate 10 having a **polyimide** base is put on the electrode and is heated and press-fitted. Further, an epoxy resin hardened at a low temperature is applied to this solder connection part and is heated and hardened.

L43 ANSWER 43 OF 46 JAPIO
AN 1983-123520 JAPIO
TI **LIQUID CRYSTAL DISPLAY**
IN FUJIWARA SHIGEMITSU
PA SHARP CORP
PI JP 58123520 A 19830722 Showa
AI JP 1982-7299 (JP57007299 Showa) 19820119
PRAI JP 1982-7299 19820119
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
AB PURPOSE: To obtain a liq. crystal display which changes sharply the intensity of transmitted light before and after applying an electric field, by using orienting **films** contg. aminosilane

bonded chemically to the skeleton of **polyimide** resin.
CONSTITUTION: Patterned electrodes 2, 2' are formed on opposite **glass substrates** 1, 1' and coated with orienting films 3, 3'. A liq. crystal layer 4 is airtightly sealed in the space between the substrates 1, 1' with a spacer 5. Polycarboxylic acid A or B as one of the monomers of **polyimide** resin is mixed with diamine C or D as the other monomer in 1:1 molar ratio, a polymn. reaction is allowed to proceed, and aminosilane is added by 1∼5pts.wt. per 100pts.wt. mixtue during the reaction to manufacture the films 3, 3'.

L43 ANSWER 44 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1983-033217 JAPIO
TI ELECTRODE SUBSTRATE FOR ELECTROOPTICS
IN NAKANO FUMIO; IWASAKI KISHIRO; TANNO SEIKICHI
PA HITACHI LTD
PI JP 58033217 A 19830226 Showa
AI JP 1981-130253 (JP56130253 Showa) 19810821
PRAI JP 1981-130253 19810821
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
AB PURPOSE: To prepare a **liquid crystal display** element which can improve heat resistance of an orientation controlling **film** and **adhesive** strength with a **glass substrate** without providing a substrate film, by applying, drying and subjecting to an orientation treatment the mixture of a silanol oligomer subjected to silane modification contg. an alkyl group or silane modification contg. aromatic ring with an org. high polymer material.
CONSTITUTION: A butyl trimethoxysilane is added to 10% butyl "Cellosolve " solution of a silanol oligomer expressed by a formulaIand this is stirred at 50∼ 70°C in the gaseous nitrogen atmosphere and reacted to prepare a butyl silane modified silanol oligomer solution. Then, this solution and a solution of polyamide acid producing **polyimide** isoindoloquinazolinedion by ring closure reaction are mixed so as to be 1:1 weight ratio of a solid matter and are made to a uniform solution to obtain a stock solution for forming an orientation controlling film. By using this stock solution, a coating film is formed on a **glass substrate** having a patterned transparent electrode film by a spinner application and is dried at 250°C for one hour to obtain about 800Å orientation controlling film. The film formed by such a way keeps the capability which orientates a liquid crystal molecule up to about 450°C.

L43 ANSWER 45 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1983-025616 JAPIO
TI FORMATION OF FILM FOR ORIENTING LIQUID CRYSTAL MOLECULES
IN HIRAI AKIRA
PA MATSUSHITA ELECTRIC IND CO LTD
PI JP 58025616 A 19830215 Showa
AI JP 1981-124299 (JP56124299 Showa) 19810808
PRAI JP 1981-124299 19810808
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
AB PURPOSE: To eliminate the need for vapor depositing installations and to simplify the installations by coating a soln. for films for orienting molecules on the surfaces of substrates having conductive **film** patterns then **holding** the substrates in a solvent which has compatibility with a solvent for said soln. and is nonsoluble with solute or the vapor thereof thereby forming the films for orienting liquid crystal molecules consisting of the solute component on the substrate surfaces.
CONSTITUTION: After a dimethylformamide soln. of **polyimide** is

coated on **glass substrates** of which the surfaces are cleaned by washing and which have the patterns of transparent conductive films, the substrates are held in "Flon " vapor by using a "Flon " washer. The substrates are removed from said washer and are heated for about 30min in air at 300°C to allow the **polyimide** films to crosslink. Thereafter, the films are oriented by rubbing, and after printing of a sealing resin, assembling, and curing of the sealing resin, a liquid crystal material is injected between the substrates and the injection port is sealed. The **liquid crystal display** panel wherein the orientation of the liquid crystal molecules is uniform and which has high reliability is obtained.

L43 ANSWER 46 OF 46 JAPIO COPYRIGHT 2003 JPO
AN 1982-099614 JAPIO
TI **LIQUID CRYSTAL DISPLAY** CELL
IN SHIRASAWA HARUHIRO; TATSUTA HIROSHI; YAMAGAMI TEIICHI; ISHIDA TORU; OTSUKA TETSUO
PA MATSUSHITA ELECTRIC IND CO LTD
PI JP 57099614 A 19820621 Showa
AI JP 1980-175545 (JP55175545 Showa) 19801211
PRAI JP 1980-175545 19801211
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982
AB PURPOSE: To enhance the bonding strength of a sealing member to substrates and to obtain a liq. crystal display cell with high reliability by coating surfaces of the substrates contacting with the sealing member with a specified insulator and by sealing the space between the upper and lower substrates.
CONSTITUTION: A metallic oxide such as SiO, SiO<SB>2</SB>, Ti<SB>2</SB>O<SB>3</SB>, Y<SB>2</SB>O<SB>3</SB>, MgF, Al<SB>2</SB>O<SB>3</SB> or CeO<SB>2</SB> is used as said insulator. Orienting **polyimide** films 5, 6 are formed on **glass substrates** 1, 2 having transparent electrode layers 3, 4, respectively so that the covering ranges of the films do not reach the sealing parts of the substrates. On the other hand, the surfaces of the parts of the substrates contacting with a sealing member 9 such as an epoxy **adhesive** are selectively **coated** with insulating films 7, 8 such as SiO<SB>2</SB> films so that the covering ranges of the films do not reach the display electrode section. The space between the substrates 1, 2 is then sealed with the sealing member 9.